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THE FLOWER GARDEN.

THE

Kitchen & Flower Garden;

OR,

THE CULTURE IN THE OPEN GROUND

OF

Roots, Vegetables, Herbs, & Fruits,

AND

BULBOUS, TUBEROUS, FIBROUS-ROOTED, & SHRUBBY FLOWERS.

BY

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PRELIMINARY.

ENGLISH literature, rich as it is in general, may specially boast its stores of wealth in the department undertaken by the present compendium, which merely professes to act as a truthful and serviceable guide to aid beginners on their horticultural journey. To continue it worthily, they must refer to, and study, the works of the Lindleys (father and son), the Hookers (father and son), Knight, Loudon, Paxton, Ingram, and others. The "Transactions of the London Horticultural Society" contain a mass of most valuable information; and as gardening is still a progressive art, a knowledge of its progress is best attained by reference to such periodicals as the "Gardeners' Chronicle," whose writers, both from their ability and the professional and official positions which they consequently occupy, are able to impart to the world each step of advancement as it is made from time to time by horticultural science.

The writer, therefore, of the present book, offers it to the public with all modesty and deference, conscious that he is speaking in the presence of the most accomplished masters and professors of the art. At the same time, he delivers it to their judgment with confidence, feeling assured that the novice in gardening, who will peruse it attentively and follow its directions, will learn much of which he was previously ignorant, and will be guided as nearly in the right path as it is possible to be by printed rules, unaided by the help of verbal instruction.

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INDEX 1

THE

KITCHEN GARDEN.

SITUATION, PLAN, AND MODE OF CROPPING.

It is not often that much freedom of choice is allowed with respect to the situation of the kitchen-garden attached to the residence of persons belonging to the middle class of society. In the suburbs of towns, at the parsonage, and even on the farm, land is either too dear, too anxiously coveted, or too jealously limited and appropriated, for preference to be practically made in the selection of one spot rather than another. Territorial possessions are too highly prized in England for men lightly to yield even a fraction of such property at a fair value, to oblige their dearest friend. Many an English nobleman and squire, even when not trammelled by the laws of entail, would almost as soon cut off his little finger as sell half an acre of his estate, for the purpose of increasing his neighbour's garden of herbs. In by far the great majority of cases, *there* is the house, where it *must* stand, and *there* is the garden, where it is, or where only it can be made. The place is to be accepted, or to be declined; you may take it, or leave it. You may create it, improve it, or refuse to have anything to do with it; but you cannot alter its whereabouts.

Since gardening is a science whose special object is a constant struggle with wild and undisciplined nature, a few slight difficulties in the gardener's way,—and they have not unfrequently been more than slight,—have served as a stimulus to increase his exertions. Thus, Scotch gardeners, as a body, are believed to owe their excellence to the ungenial climate they have to contend

ments and the outlying space of fields, as a rear-guard, on the skirts of the wood behind the kitchen-garden.

But as few of my readers will be so fortunate as to have no one but themselves to blame for the natural defects existing in their kitchen-gardens, it may be stated generally, that stiff and clayey soils will be found more difficult to manage than light and sandy ones; wet, than dry ones. Wet clays present the combination most to be avoided. By good drainage and laborious tilth, clays may be rendered extremely fertile, but scarcely ever early in their productions: and forwardness is a high point of merit in a garden, whether for pleasure or for profit. An amateur will be scarcely satisfied by his crop of green peas being the most abundant, if it is at the same time the latest, in the parish; and the difference of market-price between a week earlier or later, in fruits and vegetables, will, in the aggregate, make the difference between a market-gardener's paying his rent with ease and his not paying it at all; whereas light warm soils, even though naturally sterile and scalding, are at the same time precocious, and may be rendered fertile by a due admixture of supplementary material. The same of marsh-land and peaty soils; drainage, lowering the general level of the water only a few inches, and strata of various earths, raising the surface from half an inch to an inch and a half, consolidating and also lightening the whole, will have the effect of producing both fertile and early gardens, especially after the lapse of a few years, during which we suppose this system of amelioration to be steadily pursued. Many patches of promising soil will throw out magnificent crops of vegetables the first or second season they are cultivated; but it requires the pulverizing frosts of several winters, and the cleansing labours of several springs and summers, to make a piece of crude clay garden-ground even begin to do its best. There must be a constant and gradual admixture and working in of lighter and chemically different materials; such as sand, well-pulverized calcareous earth, spent tan from tanners' pits, bog-earth, heath-mould, anything, in short, which will help

to make vegetable-mould, and of course, when it can be had, vegetable-mould itself. A thick layer of litter or long manure, though so little used by animals as to be scarcely soiled, may be dug in deep with great advantage, to ease the tenacity of stiff clay soils. Worn-out reed-thatch from cottage-roofs will answer the same purpose. It is not the simultaneous application of any or all of these at once, which will work the remedy; it is their careful addition to the soil, and their blending with it from time to time, which will prove the judicious practice of the gardener, who must watch his opportunity between the removal and the planting of each successive crop, and who must be awake to every resource of marl-pit and sand-hole, of warren and heath, which his immediate neighbourhood has to offer. Frequently the opening of a new road, the cutting of a canal, or the making of a railway, present, temporarily, the means of permanently improving the soil of a garden, which are neglected, lost, and then ever afterwards regretted in vain. To give depth to garden soils that are naturally shallow, is of necessity a work demanding both time and the power of acquiring the materials wherewith to do it. Good garden-ground should be a mixture in just proportions, if possible, to the depth of a yard or more, of chalk, clay, sand, and what our learned men call *humus*, and French gardeners and vinegrowers *terreau*, but for which there is no better English name than vegetable-mould. All rich vegetable-mould is the result of its having been the graveyard of innumerable generations of vegetables, whose mouldering bodies supply the basis on which future production and reproduction are to take their stand. Soils, whether sandy or clayey, in which *humus* is deficient, must be liberally supplied with it, or its elements, before they can become the scene of any satisfactory horticultural action. Market-gardeners, who have their living to get by their trade, and to whom successful cultivation is a matter almost of life and death, load their land with such an abundance and variety of manure, that in a few years the most sterile soil is brought into a highly productive

state. In the offskirts of large towns, such as London and Paris, they are obliged to pay enormous rents; nevertheless, the facilities which they likewise enjoy of enriching their plots with fertilizing elements enable them to meet every difficulty, both pecuniary and horticultural. They make the soil just what they please; art and labour triumph over natural impediments, and families are maintained in respectability and comfort on a space of ground which, in its original state, scarcely bore sufficient herbage to maintain a cow.

Private persons possessed of gardens will do well to remember these facts and principles. In many country-houses, manure is absolutely grudged to the garden, because so to apply it would be considered as a robbery of the farm. In others, many valuable fertilizers are allowed to go away, in the shape of perquisites claimed by the servants. Bones, for instance, are mostly sold by the cook or kitchen-maid; but wherever there is a garden, not a bone ought to be allowed to leave the premises. Bone-dust, pounded bones, bones in almost any shape, are essential manures for turnips, asparagus, and most other culinary plants. Not only are plants grown with their aid finer to the eye, but, what is better, they are more nutritious to the human system. In other establishments, vast quantities of liquid manure are annually wasted. Hogsheads of chamber-slops, soap-suds, and other outscourings of a family, are thrown away and lost, or are even allowed to form offensive puddles for the generation of typhoid fevers, while things in the orchard and the garden are starving: while spinach runs up to seed before its time, because the soil is poor: while cabbages do the same, or form hearts no bigger than turkeys' eggs: while cherries, apricots, and other stone fruit, cannot form their kernels, but drop off yellow and immature for want of their peculiar nutriment. Market-gardeners by heaping on manure, will, in the course of seven years, convert sterility into fruitfulness. Private gardeners, simply keeping their gardens neat,—that is, carrying everything out of them which would feed the plants if

restored to the soil,—go on year after year without the expenditure of a spadeful of manure, in their flower-gardens especially, and then complain that their situation is bad and their land worthless. It is acknowledged by all, that turnips and wheat have need of manure; it seems to be supposed by some that fruit and flowers can do without it. As has been well observed in a leading article in the "Gardeners' Chronicle," "They,"—namely, the non-manuring class of gardeners,—"would seem not to know that trees and grass require to be fed as well as themselves. It would be as rational to trust to the action of a currycomb alone for keeping a horse in health." Therefore, instead of any further disquisition on the best soil and situation for a kitchen-garden, I shall simply offer this brief advice:—"Shelter sufficiently; drain well; and manure as well as you possibly can."

In laying out the ground-plan, which also involves the mode of cropping a kitchen-garden, the endeavour should be made to combine simplicity with economy. In this case, the height of art is to obtain the greatest possible amount of produce from a given piece of ground. It cannot furnish too much, as it should never be allowed to approach exhaustion. It is clear that the more rapidly one crop can be made to succeed another, and the less time is lost in waiting for any given portion of the ground to become vacant, the larger will be the sum total of all the crops at the end of a twelvemonth. This object is most easily secured by pursuing the system of cropping in rows.

To change the site of a kitchen-garden is mostly quite out of the question; to alter its arrangements will often be followed by great advantages. Suppose you have an irregular piece of ground, like that represented in *Fig.* 1. The letters **N, E, S, W,** indicate the cardinal points of the compass. The sketch is given, not as a model garden-plan, but to show the principle to be generally applied, varying the details according to circumstances. The first care will be to mark out a sufficiently large

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square or oblong, on the most convenient slope or level, and on the best soil, and to inclose it, if possible, with a brick wall, WW, entirely round it; of greatest height, say twelve feet, on the north side; and of least elevation, say eight, at the south. At least two doors, D, D, must be left, wide enough to admit a wheelbarrow, or a small cart. A wide border, B B, will be carried entirely round the garden, at the foot of the wall. This will serve, according to aspect, to raise early vegetables, to receive small seed-beds of cabbages, lettuces, and other things which are transplanted afterwards, as well as those which require temporary pricking out, such as celery; and part of it may be permanently occupied by sweet herbs, medicinal plants, and other useful stock vegetables: part also may be devoted to horticultural experiments. It is convenient to have in a kitchen-garden a little plot wherein to put surplus seeds and roots of flowers that are not wanted, at the moment, in the flower-garden and the pleasure-ground. Not only is it convenient to have such a supply in reserve, to fall back upon in case of accident elsewhere; but, as bouquets and cut flowers are always in request, these can be gathered *ad libitum*, without fear of despoiling the parterre. This circumscribing border will be sure to afford room for one or two patches of flowers at the discretion of the family to pluck. A straight rectangular gravel-path, P P, will go round the whole. It may be edged with box, parsley, strawberry-plants, chamomile, or anything of that kind, if space is limited; but living plants are not the most convenient edging; they harbour slugs, and impede the cultivation of the border. Pebbles, tiles, or iron or wood, which may be had in various patterns for the purpose, are better. Cross-paths, *p p p p*, will lead to the centre, where there should be,—if not a fountain, F, with its basin to receive the water ejected, and always standing full, ready for watering,—at least a tank, or cistern, or shallow well, with a sufficient supply of water from some source or other. Inside the path is another border, *b b*, divided in the middle along its whole length by a wall of

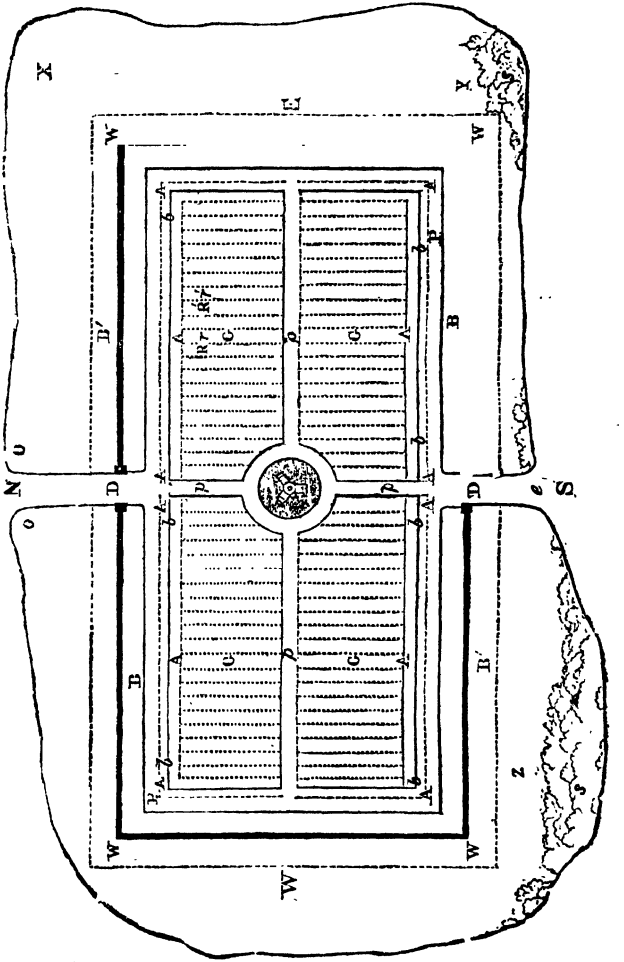

Fig. 1.

espalier apple-trees, A A A A. This border, which will serve as a supplement to the former, and will render nearly the same services, is cut up into several portions by the intersection of the paths. Another path, within the espaliers, goes round the whole; and there will remain in the middle, the four distinct open plots of ground, G, G, G, G, which constitute the main body of the garden for cropping for the supply of vegetables in quantities.

Each of these open plots, G, will be cultivated in rows, as at R *r*, R′ *r*′, each consisting of one special kind of vegetables or fruit, annual or perennial. The breadth of each row may be made to vary, according to the supply required of that particular plant or root; the only point insisted on is, that the row extend completely across the plot. It is better to make the rows run from north to south, as they do in our cut, instead of from east to west, or in any other direction; because tall-growing crops, such as peas, beans, raspberries, scarlet-runners, and even rows of gooseberry and currant bushes, have thus an equal share of sunshine on each side, supposing the sun to shine all day long, and the chances of morning and evening sunshine equal. In some few situations that are greatly exposed to south-west storms, it is absolutely necessary to plant rows of tall-growing peas, &c., in lines running from west to east, to avoid exposing their broad-side to the gale, and incurring the risk of being dashed to the ground; but it is clear that the northern and the southern fronts of such a row will yield fruit very different in amount, and also differing somewhat in the time when it is ready. The plants will have to occupy the ground longer than they would have done, in order to allow the smaller and later portion of the crop to arrive at maturity. This evil is best avoided when it can; and therefore I repeat, when not compelled to do otherwise, crop the land in beds or rows running from north to south.

A garden so distributed need scarcely ever lie idle in any part of it; almost every strip may be kept in a productive or bearing state. Suppose the row R has consisted of late cauliflowers, the last of which has been

removed in November; for if half a dozen or so remain unconsumed, they may be drawn, and hung up by the heels, root and all, in a shed or cellar, to save them from early frosts, and to furnish a late supply. Instantly that the last cauliflower is gone, let the row be manured and dug; for the barrowing of which manure, the paths P, *p* will give easy access at either end; and one or more drills, according to the breadth of the row, of early peas may be sown immediately. When the peas are done with, in June or July, again manure this same row R; as soon as it is dug, sow on it, always in drills, garden turnips, or successions of salad, or plant on it broad-leaved endive for blanching in autumn, or Savoy cabbages. Remember that all seeds, except those of plants to be pricked out as soon as they have three or four leaves, are to be sown in drills along the rows; in all other cases, broadcast sowing is to be discarded. The land, too, is always to be occupied, as soon as any row is vacant. If it is absolutely compulsory to defer the planting of some crop, such as kidney-beans, which cannot be safely put into the ground till the season has advanced to a certain epoch, at least let the row be dug and prepared. It had better grow nothing, than grow weeds; and a slight pointing with the spade, or even a good raking, will restore its freshness when the time arrives. Thus there will be no difficulty making the said row furnish a constant succession of crops from the present moment till gardens shall be no more.

To exemplify the general applicability of the system, let us now suppose the row *r* to be planted with something that occupies the ground for a longer time than lettuces or peas. As a strawberry-bed, it will have to stand for three or four years undisturbed. Well, leave between it and the row R′, adjoining it, the narrowest possible strip of footpath to gather the fruit and cut the runners, and R and R′ can follow their course of cropping without in the least inconveniencing either *r*, or each other, or being inconvenienced by it. When the strawberry-bed is at last exhausted, and

another bed, say *r'*, has been planted elsewhere with young runners from the worn-out bed, *r* can receive a coat of manure, be dug, and the plants buried deep in the ground, as the easiest way of getting rid of them, besides increasing the stock of *humus;* and something else, perhaps broccoli, may be planted thereon, which will have the advantage of growing upon land that has rested, and has enjoyed the absence of that exhausting crop for three whole years. A row, when done with, may be turned to similar account at once, without incommoding the others, whether it has been occupied by artichokes, sea-kale, asparagus, raspberry-canes, currant-bushes, or anything else, which is all the better for occasional change of spot. The only care is, not to place side by side two crops that would too much overshadow each other. No inconvenience is experienced from any bed, as asparagus, which by good management may be made almost everlasting. All that is required is to adapt the crops on the adjacent rows to its stature at certain times of the year.

The irregular remnants of land, X, Y, Z, &c., outside the garden-wall, may often be turned to profitable, and even to picturesque effect, especially if the whole be inclosed within a park paling or secure fence. In the first place, every garden, even the most utilitarian, ought to be provided with one or more out-of-the-way corners, as at O, o, which are never seen by visitors, and only by the master when he goes purposely to inspect them, and which receive heaps of decaying leaves, manure, broken potsherds, prunings of trees, last year's raspberry-canes, and the various other offal of a garden, which *must* be put somewhere, and are best out of sight. A tool-house, a mushroom-house, a root-shed, a propagating-pit, and several other *etcetera* which are more useful than ornamental, may thus be made to retire behind the scenes, to play their part when called upon, and not before. A border running completely round the outside of the garden wall, as B'B', will prove extremely serviceable. At its north exposure it can receive morel

cherries and Alpine strawberries; on the east and west, a few pear-trees, with currant and gooseberry bushes against the wall, to be netted over for autumnal desserts. The south wall, outside, will supply a welcome addition to the stock of peaches, apricots, grapes, and nectarines, within. The border may contain surplus flowers, for cutting, early salading, latest kidney-beans and peas, and the hundred things for which a south border is invaluable. The entrance, *e*, may be flanked right and left by a small shrubbery, *s s*, of hardy evergreens, such as box, holly, Portugal laurel, and yew. To save space within the garden, Z and Y may be filled with currant and gooseberry bushes, Jerusalem artichokes, or raspberries. On the eastern and western extra slips of land, may stand a row of cherry or pear trees. The tract marked X, supposing such to exist, will be a favourable spot for a small miscellaneous orchard (especially if the whole inclosure slopes to the south), consisting of a walnut-tree or two, a medlar or two, a few plum-trees of various kinds, and as many apple-trees as there is room for, without crowding or too much overshadowing. If the whole can be backed by a screen of Scotch firs, to rejoice the eye with green in the sunshine of winter, our kitchen-garden will be charmingly as well as comfortably situated. On the magnitude of its scale alone depends the addition of a gardener's cottage within some part of the general inclosure. A sheltered nook should be devoted to bees.

In cropping a garden according to this or any other system, it is desirable for the gardener to have some record of his operations to refer to. This is best effected by numbering the beds or rows, and entering their crops, as planted, in a memorandum-book. Few people will take so much trouble as such entry requires, or at least continue it with regularity. And yet they are annoyed and inconvenienced by finding some patch of seed which they had sown, of a kind which will not keep its vitality for more than a year or two, such as onion-seed or carrot-seed, not come up, while they have forgotten the date at

which they sowed it. They are afraid to dig up the bed and re-sow it with fresh seed, because they may thus destroy it just at the moment when it is going to start; and yet if they delay deciding upon something much longer, the advanced season may render the crop inferior. An easy mode of escaping from this awkward dilemma, is to write, at the time of sowing, the name of the seed and the date of the operation on a small square piece of writing-paper, thus:—In the case of transplantation, to know what you are about, and to gather experience from the result, the paper should bear inscribed the date of transplantation as well as of sowing, as thus, in Fig. 3. Double the scrap of paper twice at least, or into one-fourth of its size, or less, with the writing inside. Take any sound piece of stick that is nearest at hand, not too thick, and about six inches long; point it at one end, and make a slit at the other; insert the folded label into the cleft part of the stick, of course with the doubled edge upwards exposed to the weather; stick it into the seed-bed, and in ordinary seasons it will serve you for a record as long as you are likely to want it for that particular crop. Your memory must serve you for the succession of one crop after another on each strip of land.

Tripoli Onion,

Sown August 20.

Fig. 2.

Early York Cabbage,

Sown July 19,

Planted out Oct. 15.

Fig. 3.

The reason why each crop that has grown on each strip or row should be remembered is, that a studied rotation of crops is advisable, though greater liberty is allowed in gardening than in farming; because the extra labour and manure bestowed upon the land make up for the evil resulting from any injudicious succession. It is the universal belief amongst vegetable physiologists, that each species of plant prefers, and extracts from the soil, a somewhat different kind of nourishment,—just as a

hundred guests sitting down to a banquet will vary considerably in their individual selection of dishes. Therefore, what one plant leaves, may prove the food exactly suitable to another: and instead of causing cabbages to be followed by cabbages, or other vegetables of the same family, as cauliflowers and Brussels sprouts, it is best to alternate them with leguminous or umbelliferous plants, such as peas and beans, or parsneps and carrots, with intermediate crops of salads and roots. It is sufficient to point out the principle, leaving the details to be worked out according to the practitioner's judgment and convenience.

GARDENING TOOLS.

It is not always the most complicated machinery which does its work the most perfectly. Some implements are necessary: and of those alone I proceed to speak briefly. There are gardening toys, as well as gardening tools. The object of the present book is to give instructions, not for pleasant play, but for serviceable work.

It may be observed, that as there are local tastes in the style of gardening, and local preferences of certain vegetables to be cultivated, so also there are local tools, some few of which deserve a place in every garden tool-house.

The English spade is a good implement, but it is too broad in the iron, and too short in the shaft for many soils and many workers. Women and boys can dig with greater ease, and even grown men can get over their work more quickly, digging at the same time to an equal or a greater depth, with the French spade, which somewhat resembles the implement used by the Lincolnshire marshmen to excavate their drains and ditches. The iron is ten or eleven inches long, and five or six broad at the most, being narrower at the bottom than at the top. The shaft is five or six and thirty inches long, including the handle at the top, which is simply a cross piece of five inches. The long leverage of handle and the narrowness of the blade allow it to be used with less resistance

from the soil, which at the same time is more finely divided than it would be by a spade with a broader iron. The English trowel is excellent for many purposes; but besides it, it will be found convenient to have one or two long, narrow ones, like the cut Fig. 4. The transplanter is a tool with handles at one end, and a couple of semicircular blades at the other, which, when closed, form a hollow cylinder. (See Fig. 5.) The two blades, open, are thrust into the ground on each side of a plant, the clod is compressed and removed by a side movement, and many roots can be thus removed, even at the time of flowering. A rake; a common hoe, to draw the earth and cut weeds by drawing it towards the operator; a Dutch hoe, to cut weeds by pushing it away from him; a line, or stout cord, fastened to a strong peg at each end (there is a good reel contrivance), to be shortened according to requirement, by being wound round one or both of them, and to serve for drawing seed-drills, and for planting rows of cabbages, lettuces, &c.; a wheelbarrow; a fork for taking up potatoes, &c., and spreading dung; a mattock, to stub up tough, deep roots; mats, either of bast (though those are getting scarce, since the war with Russia), or of rye-straw strung together, for shading, protecting from frost, warding off hail on the approach of a tempest, and sheltering from cutting winds; a set of hand-lights or bell-glasses, like Fig. 6; two or three sash-frames to cover hotbeds or cold-pits; watering-pots of various size and construction: some without roses,—for the pouring out of diluted liquid manure to newly-planted cauliflowers, cabbages, &c.,—some with roses of different degrees of fineness in the holes with which they are pierced, to distribute pure water, like a natural shower, over beds of seedlings; a hogshead or two for liquid manure; rain-water tubs in

Fig. 4.

Fig. 5.

Fig. 6.

abundance, if there is no cistern to receive the rain from the roofs; plenty of neat sticks, to support dahlias, standard roses, &c.; besides an abundant store, laid in beforehand, for peas and runner beans; a hammer, nails, and shreds of cloth (though I shall describe a better mode than that of fastening fruit-trees to walls); a good pruning-knife; a budding-knife; a small saw; a bill-hook; a roller, for gravel-walks and grass; a pair of shears, for clipping box-edging and quickset hedges; flower-pots and their pans; an iron-wire sieve or two, for sifting mould; baskets and punnits, to receive the produce of the garden when gathered; a dibble, for setting beans, &c.: all these are almost necessaries. Let each tool have its place of deposit, instead of being left about carelessly in corners. If expense is no great object, there may be added to the list a portable pump or garden-engine, for syringing wall-trees, standard shrubs, and beds in masses; a patent grass-mowing machine, for cutting lawns, bleaches, or bowling-greens, closely and expeditiously; a sundial, fixed on a pedestal; nets, for preserving the fruit on wall-trees and currant and gooseberry bushes, in autumn, and which will also shelter peach and apricot blossoms from slight frosts in early spring; in short, the many other forms of horticultural appliances, whose latest improvements may be learned by a glance at the advertising columns of the gardening journals.

The products of the kitchen-garden shall now be treated separately, under the heads given on the title-page; namely, Roots, Vegetables, Herbs, and Fruits. It is useless here to occupy our limited space either with definitions that are not absolutely required to explain the subject, or with discussing the classification of well-known objects, which may, without any violence, be equally referred to more classes than one.

ESCULENT ROOTS.

The Potato—Solanum tuberosum.—The plant which produces this well-known tuber is a native of South

America, and although introduced to England in the sixteenth century, cannot yet be said to be acclimatized. Evelyn's contemptuous direction, "plant potatoes in your worst ground," is what we are obliged to come to after all. But the truth is, they were not generally known and cultivated over the country before the middle of the eighteenth century.

Main crops of potatoes, for late autumnal and winter use, belong rather to the field than to the garden. Unless a garden is of the largest size, it is better for a family to buy all except the early potatoes, and devote the space they would occupy to more costly vegetables; such as seakale, asparagus, and green peas. As yet, no specific remedy for the potato disease has been discovered; those who put their faith in assertions to the contrary will be deceived. As a general rule, it may be stated, as to time of planting, that the later it is deferred, the greater is the danger of disease to which the crop is exposed; and as to soil, the more nearly it approaches to pure sea-sand (itself, however, a very variable and heterogeneous composition), the more healthy is the sample of potato produced. Autumnal planting, so much insisted upon of late, is excellent when the soil is thoroughly drained, the sets planted deep enough (about a foot), and the following winter not too severe. Covering with leaves or straw litter is a hazardous practice in the open ground, as it is apt to draw up the roots too early in spring. The early varieties of potatoes are also found to be less liable to disease than the late ones.

For the first garden crop, there is not a better variety, upon the whole, than the ash-leaved kidney. Though not an abundant bearer, it comes to hand quickly, and is of first-rate quality and flavour. Without resorting to hotbed-frames, a very early crop, to be consumed as a delicacy, may be obtained by planting in December a single row of sets, about four inches deep, in the border in front of a south wall, at the distance of six inches from the foot of the wall. If the space of eighteen inches be left clear in front of this row, unoccupied by any other

crop, the potato sets may be planted as close together as six inches in the row. If the wall be of any considerable length, the supply thus obtained will suffice till the next two successions of ash-leaved kidneys (the first from warm borders, the second from the central part of the garden) come into bearing. Good kinds to succeed these will be the Early Shaw, or the Early Champion. Chapman's Kidney is an excellent and handsome variety, which comes in early; as also are several of those advertised by the London and provincial nurserymen.

All potatoes intended for seed, or sets, should be laid and turned in the sunshine (sheltered from wet), till they have become quite green all over. The greening, besides giving them greater vigour, renders them unfit for table, and therefore insures their being respected late in the season, when potatoes are scarce. They are also less tempting to petty thieves. The selection of sets, and the process of greening them, is best performed at the time of taking up; all the trouble it gives, is simply to toss the seed potatoes aside into a separate basket by themselves. It is therefore better that every gardener should save his own sets; although the advice is worth attending to, that those who have only a small piece of ground should never save their own sets, but should buy what they want every year, as early as possible in October, before the eyes have grown. It is truly urged that the potato ought to have a change of ground; those who have large farms may save their sets from one kind of soil, and plant them out next year on a different one. When this cannot be done, friends and neighbours may still exchange sets with each other. If greened sets could be exchanged, every requirement would be fulfilled.

When the ash-leaved kidney sets are thoroughly greened, place them in a shallow drawer, or flat basket, in a single stratum, upright, or all leaning in one direction, with their noses, crowns, or bud ends upwards, and the string end, or part next the stalk, downwards. Whole potatoes, from two to three inches long, make good sets. Put the potatoes so packed in any light, airy, dry, cool

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place, where they will be secure from frost, to pass the winter, as the main crop of this variety will not be planted before February or March. Each potato will then have starting from its nose a single stout green shoot about an inch long. In planting, take care to leave this bud uppermost. The sets, so prepared and packed, will occupy considerable room; but they will well repay the trouble they give. In spring, dig your border lengthwise, working backwards, to avoid trampling on the ground. In the first trench, by the aid of a line, set your potatoes nine inches apart from set to set. The depth will vary with the season (from 9 to 3 inches); the later the shallower. Dig on, and plant a second row in a trench eighteen inches from the first, shifting and using the line each time, to keep each row perfectly straight; and so on. The potato-bed will thus be left quite level, and will remain untouched till the weeds appear. Defer the first hoeing till the potato-shoots are up. When six or seven inches high, earth them up by drawing the mould towards each row from the middle of the space between the rows. This will suffice till the tubers are formed, and the crop gathered, to be replaced by something else.

Mr. Cuthill's mode of growing early potatoes is not quite so simple as the above; but it must be a successful one, if, as he says, until he published an account of his method of culture, he could undersell all growers of early potatoes in the London markets, but since he made it public, the price of early potatoes has diminished one-half.

"The sets, well greened, are laid out singly (with their heads all one way, to preserve order at taking-up time when planted out), under a stage in a cold green-house. All persons will not have such a convenience, but market-gardeners may fill their 'lights,' putting the glass on and covering up accordingly as the winter advances. If they cannot spare frames, trenches may be dug; one five feet broad and a hundred feet long, will hold enough potatoes to plant an acre of land. Farmers may find room in

lofts, sheds, trenches, or other places; for cottagers, a very small corner will be sufficient. Care is taken that no water fall upon them, and nothing more is done until about the middle of January, by which time the shoots have grown about an inch. The shoot is very strong and green, the young fibres striking out from the base of the shoot and very bold and strong. I now put on as much mould as will cover them, and one watering is given to mix the earth in between them. They are then left untouched till planting-out time; they are not even watered, because the less water given to them, the hardier and more wiry they become, sending out an immense number of roots to collect food; in fact, when taken up in the middle or end of February, they have produced a complete mass of strong, fine roots, with a powerful stem. The ground is prepared during the winter by trenching two spades deep, and laying it in ridges. The ridges ought to run north and south; this being of the greatest consequence, in order to allow of an equal action of the sun and air on the sides. Early potatoes should be planted in ridges from eighteen inches to two feet apart, and the sets be placed at intervals of nine inches; late potatoes ought never to be planted closer than two feet to two feet six inches from row to row, and one foot from set to set.

"As soon as the ground is trenched, I sow salt and soot, in the proportion of about two tons of salt and thirty bushels of soot to the acre. I have used no other manure than this for five years. The planting is commenced by taking up the sets carefully, and placing them at the bottom of the first furrow, the shoots being placed parallel with the ridges. The mould of the first ridge is then laid over them carefully, as the shoots are by this time three, four, or even five inches long; the next ridge is proceeded with in the same way, and so on, the ground being left at last in ridges lying directly over the sets. If all the side shoots are removed, leaving only the main shoot, the crop will be ripe or fit to dig

nearly a week before the tubers with all the shoots attached, although the crop will not be near so heavy.

"When the plants come up, they grow so fast that they smother the weeds, if there be any. If May should be very dry, as in some seasons, I am obliged to water, and when I do, of course I continue it twice a week until rain comes; for if watering be not continued, you only bring up the fibres to be killed by the heat of the sun. The main points in the above mode of management are, that the potato is not allowed to shoot and waste its substance in growth to be thrown away; the first shoot or bud is allowed to proceed onward to its perfect development, while in the common method of proceeding, the tubers are allowed to sprout from all the eyes, to produce a quantity of weak shoots, which are broken off and wasted at planting-time, leaving the impoverished tuber in a condition which necessarily retards and weakens the future plants."

When seed potatoes are employed of larger size than a turkey's egg, they may be cut in two, leaving one or more strong eyes on each set. In this case, they ought not to be planted immediately after division, for fear of making them rot; they should be exposed to the air for two or three days, to allow the cut surface to dry and harden. But Mr. Cuthill justly observes, that "if the growers of the potato will continue to cut the tubers into sets, all the crown sets ought to be kept together, and all the bottom eyes planted by themselves; for the sap of all potatoes rises to the crown eyes first, and when cut and planted indiscriminately, after a mild season, the crop is alternately good and bad; *i. e.*, the sap is so much abstracted from the lower eyes, by the top ones, that the former either push weakly, or not at all."

In most situations, potatoes are best grown on the Irish lazy-bed system, though it would be better to avoid planting potatoes at all in such places. The ground is marked out in beds four or five feet wide, according to convenience, leaving between them alleys

two or more feet wide, in proportion to the depth of the soil. The beds are manured, slightly dug over, burying the manure shallow, and the seed potatoes are laid in rows on the surface, and then covered with earth thrown out of the alleys, which are thus converted into trenches or drains. As the growth of the plants advances, more earth is thrown on them, till the sets are about as deep as they would be in ridges. When the crop is taken, the mould is returned to the trenches, and the following year an alternation may be made, by causing theformer beds to serve as trenches to supply earth for covering potatoes planted on the surface of what were trenches the summer before. Necessity, the mother of invention, is the only excuse for this mode of culture. It is a sort of compromise, by which a piece of marsh or bog consents to become half dry land and half water; but it affords a useful hint in wet seasons. By sacrificing a few rows of potatoes, or merely by taking them up before their growth is completed, temporary drains may be made, which will either respite or save the rest of the crop. The lazy-bed system may be advantageously followed on stiff retentive clays, where effectual drainage is difficult.

A garden ought to contain a few rows of potatoes of choice, late, or curious kinds; such as the red potatoes, both kidney and round, which have the reputation of comparative freedom from disease; the Negro, which has a black skin, but is white within, and is much approved, and which makes a striking dish on the dinner-table when served with its jacket on, or, as the French say, *en robe de chambre*. The small Dutch round potato is another choice late potato, firm and well-flavoured in quality, and is useful to serve whole in made dishes which contain vegetable ingredients. Seed Dutch potatoes may be obtained from most of the seaports on our eastern coast; for instance, from Great Yarmouth, in Norfolk. Main and late potato crops should not be allowed to form the berries, the root being thereby robbed of a certain amount of nutriment. It is there-

fore a good plan to pick off the blossoms from potato plants, as soon as they open. As a general rule for early crops, potatoes may be planted in autumn, if they be but covered by a sufficient depth of earth to prevent the frost from reaching them; but it is more usual to plant in February and March for early crops, and from March to May for main and late crops.

There is a mode of obtaining make-believe early potatoes, which deserves recording solely for the sake of putting the inexperienced upon their guard. The trick, though stale, has been successfully played of late in several English provincial towns; but a quotation from Mr. Cuthill's excellent pamphlet will suffice to open the eyes of the amateur gardener. "Some twenty years ago, a gentleman whom I then lived with bought what were called *Dutch winter potatoes*. They were to be planted in the autumn, and to grow all the winter. The impostors charged a guinea a peck for them. It was a round potato; they were planted according to directions; but when the frost came, away the unfortunate tops went like all others. This very plan is now practised for Covent Garden Market; the old tubers are kept back until July, and then planted. They grow very fast, but are not near ripe by the approach of frost. As soon as the halm is cut down, large quantities of straw are put on the ground, and towards Christmas the tubers are dug up, and put into one and two-pound baskets, and are sold for new potatoes, at from sixpence to eighteen pence per pound; they are as full of water as a turnip, the leaves being all destroyed before the cells had time to become filled with starch. The Cornwall kidneys are the only ones used for this purpose. By taking one in your hand, you will find the skin firm on, which is not the case with a new potato, either grown in frames or in the natural ground." In short, they are not new potatoes at all, only abortive and very inferior old ones.

Besides the above-named early kinds, there is the Early Frame, a favourite for growing under glass; Fox's

Seedling, a good dwarf-growing kind; the Early Oxford, round, even earlier than the Ash-leaved Kidney, and mealy; the Ready Penny, also round, and very early, more productive than the Ash-leaved; the Yellow Golden, round, early, and productive; the Early Manley, excellent and prolific; and the Prizefighter, an excellent early kidney. One of the best foreign kinds is the *Belge Native*, or Early Belgian, known at Brussels by the name of *Neuf-Semaines*, or Nine-weeks potato. For later use, there is the York Regent, excellent and mealy; the Blush Kidney, excellent; the Lancashire Pink-eyed; and many others, all good in their kind; some being greater favourites in one locality, and some in another.

During summer, potatoes are best taken up from the ground as they are wanted. Those for winter use had better remain till the halm is entirely withered and brown, and severe weather is apprehended. A dry day, if possible, is best for taking them up, and they may be stored in any dark, dry, airy place, which is secure from frost. A well-drained cellar, through which currents of air can be admitted, fulfils every condition requisite for their preservation. Permanent potato-pits sunk in the ground, lined with brickwork and covered with thatch, are effectual, and may be turned to various account in summer; but the most common way is to pit them out of doors, either in simple round heaps, or in long ridges, on a dry sandy or gravelly spot. The potatoes, as dry as may be, are laid on a bed of straw, and covered first with more straw, and then with earth taken from a trench running round the edge of the heap or ridge, and which will thus serve as a drain to the whole. If the potatoes are moist, or there is apprehension of disease amongst them, it will be well to leave a wisp of straw sticking out at the top, which will thus serve as a gas and vapour-shaft, or ventilator. The more neatly and perfectly the outside of the ridge is smoothed with the back of the spade, the better it will fence the rains of winter.

The Carrot—Daucus Carota.—This and the parsnep belong to the natural family of umbelliferous plants,

M. Barthel, of Mulhausen, which professes to be better than the other white and yellow carrots, but as yet is but little known.

Carrots should be taken up with a fork, as little broken and bruised as possible. The decaying of their tops is the sign that they are ready. They are easily stored; they may be packed in sand, or they may be arranged in a heap, that will greatly economize space, by laying them head and tails alternately, against the wall of a dry cellar, till they themselves form a sort of internal wall. French market-gardeners, at the time of storing, cut off a thin slice of each root at the top, containing the central bud, not ill-naturedly, as some have supposed, to prevent others from obtaining seed of the same stock, but merely to keep the shoot from starting and exhausting the root. Carrots are thus preserved till high up in the summer; in fact, till their successors in the garden are ready to take their place in the soup-boiler.

The Parsnep—Pastinaca sativa.—The parsnep is but little known out of Great Britain and Ireland, and where known, is mostly but lightly esteemed. The peculiarity of its flavour does not please all palates: nevertheless, it is a useful and nutritious root. There are but few varieties of parsnep: the Hollow-crowned is the best for garden-culture; the Turnip-rooted is almost worthless, having merely the characters of a stunted root. The Channel Islands Jersey and Guernsey are famous for their field parsneps, which are largely consumed, both in soup by the inhabitants, and by milch cows and fatting cattle. Their excellence may be attributed rather to the soil and climate than to any peculiarity of the kind cultivated. Still, many gardeners prefer seed which is thence imported.

Parsneps bear earlier sowing than carrots; they might even be sown in autumn, had not such plants a tendency to run up to seed in the course of the summer. Unlike carrots, half-grown parsneps are of little or no value; indeed they do not attain their full flavour and sweet-

ness till they have ripened from the effects of time, which some think is hastened by exposure on the open ground to a few days' and nights' frost. They are not at their best before December or January, and are excellent during Lent as accompaniments to salt fish. It is consequently useless to leave the seedlings thicker than they are to remain eventually. They should be hoed out to much the same distance in their drills as is allowed to full-grown carrots, as soon as the young plants have got three or four leaves. All the subsequent care required is, to keep them free from weeds.

The failure of potato crops and the robust nature of the parsnep, has suggested the notion that the latter root would bear transplanting as well as the cabbage does: and the supposed fact has been disseminated in little books, written for distribution among the working classes. Now it makes some difference to a labouring man, whether the plant which occupies his little bit of ground from the beginning of May to the end of October, at shortest, be a real parsnep with a crown three inches across and a root tapering down to a proportionate length, or a mis-shapen root, on which, were it a newly-introduced species, horticulturists would doubt whether it was worth their while to try experiments or not. It may, therefore, be as well to state, that the result of experiments on the transplantation of parsneps has been to produce a few barrowfuls of very ill-shaped potatoes, with a few parsnep-leaves growing somewhere from a sort of crown, and an endless beard of innumerable fibres stretching downwards in search of the earth's centre of gravity. The effect of transplantation on the parsnep is, evidently, to form these fangs and fibres by the breaking of the original tap-root: and however worthless parsneps thus cultivated may be to eat, it is more than probable that they would be extremely valuable to produce seed, if permitted to remain where they had once been reset. But half a dozen shapely roots planted in the spring will produce a man seed enough for himself, besides a little to spare to his neighbours. The cottager will find him-

self sadly disappointed, if he transplants parsneps in the hope of obtaining roots for himself, not his pig, to eat. The agricultural labourer is generally too well experienced to adopt the system, but many other persons with small gardens might be induced to occupy their space unprofitably, if a word of caution were not whispered in their ears.

The Turnip—Brassica Rapa, or *Napus.*—Another root which modern agriculture has converted into a most valuable field crop, but whose excellence for the table has caused it to be raised in gardens for seasons when the larger supply is not to be had. It is remarkable that the very best turnips are those grown at no great distance from the sea. Soil containing a large proportion of sand and marine manures, such as fish-refuse and sea-weed, accompanied by the influence of saline mists, appear the agents best adapted to grow turnips to perfection.

In gardens, let the soil be rich and light. Sow in drills about a foot apart, and hoe out to about the same distance in the drill, at first. Turnips may stand a little thicker in the garden than in the field, both because some of the varieties are smaller, and also because many will be drawn as soon as a moderate-sized bulb is formed. If sowing takes place too early, most—sometimes all—the plants will run up to seed at once. Much will depend on the spring's being dry or showery. Something must unavoidably be risked in obtaining the earliest, or the second earliest, turnips; but nothing venture, nothing have. The end of March is quite soon enough to begin; afterwards, small successional sowings may be made once a month, or even once a fortnight, if there is room for them. A last speculative cast of seed may be made in the middle of August or the beginning of September. If the winter sets in early, and the plants have not time to bulb, they should still be suffered to stand, to furnish turnip-tops,—a delicious and wholesome vegetable,—in spring, when the garden has only a scant variety of greens to offer. But if the autumn is long, mild, and

fine, these late-sown turnips will be sure to produce some respectably-sized and valuable roots.

For general garden use, perhaps the best is the Early Stone or White Stone; the Yellow Malta is excellent; the American Stone, or Purple American, with a purple tinge on the part exposed to the air, though perfectly white within, is early and well-flavoured, but is tender, apt to rot in wet seasons, and does not stand the winter well; the Yellow Aberdeen, or Scotch, is hardy and well-flavoured; the Early Dutch is good; a new turnip,—the Orange Jelly,—raised by Mr. Chivas, of Chester, deserves to be more widely known. It is mostly looked upon as a mere field turnip, but is early and excellent for the table. The most delicate turnip-tops are those from Swede turnips: the gardener's requirements must dictate to him whether it is worth his while to plant in autumn a few bulbs for that purpose in some vacant corner. It is useless to give directions about storing turnips, as such are of little value for culinary purposes, except, perhaps, to flavour soups and sauces. For this object, the French prepare turnips by drying and baking them till they are dark-brown, or nearly black, to enrich their ragouts and made-dishes. The small upright radish-like turnips, known and esteemed abroad as the Teltow, the Freneuse, the Navet de Meaux, and the Long Yellow, are not likely to be appreciated here, even if they were generally introduced. Their appearance would prepossess but few gardeners in their favour. They require warm and sandy spots; on strong clays they become sticky and good for nothing.

The cotyledons, or seed-leaves, of young turnips, as they spring from the ground, are very attractive to slugs, snails, and several species of small insects. Early crops are often thus destroyed, especially in dry springs. The best remedy is to force the growth of the plants as much as possible, as they are safe when once they have made three or four leaves. Therefore, not only should a turnip-bed be in good heart, but the drills may be watered with liquid manure immediately before sowing

the seed: and as soon as it makes its appearance above ground, waterings with soft water should be frequently repeated, till rain falls.

Salsify, or *Goat's Beard—Tragopogon porrifolium.*—There are several pleasant roots, of which this is one, which are rarely cultivated in England, except in aristocratic gardens, but which are seen in abundance on the Continent, in the markets of every small town and village. The others are Scorzonera, Chicory, and Skirrets; the latter being the less common. They are served either separately, plain boiled, and then covered with white sauce, or they are made to enter largely into the composition of such dishes as beef *à la mode*, harricoed mutton, ragouts, &c., in the same way as carrots, asparagus-tops, or green peas. In either condition, they afford an agreeable and salutary variety to our list of winter vegetables; and they are all so easy of culture and so hardy, that they deserve to be brought forward out of their present state of neglect, especially as they were not always so much despised and forgotten in Great Britain. Skirrets, particularly, were formerly much esteemed in cookery. In the north of Scotland, they are cultivated under the name of "crummocks."

Sow in March and April, in drills eight or ten inches apart, in good deep-dug soil, which has been highly manured for the previous crop. Salsify does not bear transplanting with advantage. Thin them out in the drills to four inches from root to root. Take up in November, and preserve in sand, in a cellar, like carrots, as many as are likely to be wanted during the continuance of frost. Those left in the ground will send up in spring stout green shoots, which are boiled and eaten like asparagus.

Scorzonera, Viper's-Grass, or *Spanish Salsify—Scorzonera Hispanica.*—The name of this excellent root is derived from two Spanish words, *scorza*, root, and *nera*, black: and the uninviting colour of the outer rind greatly restricts its general use. Housekeepers do not like to waste their time in scraping it; but in the markets of most

large towns in France, scorzonera may be bought ready-cleaned for cooking.

Scorzonera differs from salsify in not being fit for use till the second year: and so far the progress of its vegetation is remarkable. Other esculent roots, after having flowered and ripened their seed, become tough, woody, and uneatable; but scorzonera, sown in spring in rich soil, quickly forms its long straight roots, without putting forth any ramifications. The majority of the plants display their yellow flowers, and subsequently bear seed. If those plants were taken up then, they would be found so stringy as to be useless for the table; but in the spring of the following year, the fibres have disappeared, the roots become fleshy, tender, and full of milky juice, exactly as they were before flowering; and they continue to increase in size without losing their good qualities. They may be sown exactly like salsify, but require double the room to grow in. As the germination of both these seeds is somewhat uncertain, watering in dry weather will be useful to aid their coming up. If possible, procure seed of the previous year.

The Skirret—Sium sisarum.—A native of China, with the root composed of fleshy tubers about the size of a man's thumb, growing together something like a dahlia root. Most gardening books recommend this esculent to be raised from seed; the present Book for the Country advises the contrary. If seed be used, it may be sown and treated exactly like salsify; but amateur horticulturists, long baffled in the attempt to raise a crop of skirrets from seed, have at last discovered in Evelyn's *Kalendarium Hortense*, or *Gardener's Almanack*, the wrinkle, which a host of gardeners had failed to supply:—"March.—Sow skirrets in rich, mellow, fresh earth, and moist: and when about a finger long, plant but one single *root* in a hole, at a foot distance." The skirret being a perennial plant, division of the root offers the surest and most ready mode of propagation.

Chicory, Succory, or *Wild Endive—Chicorium Intybus.*—Chicory roots are eaten on the Continent in the same

way as salsify and scorzonera. They are more bitter and less delicate in flavour, but they yield a larger crop, and afford a considerable supply of wholesome nutriment to palates that are once accustomed to the taste: on that account they are mentioned here. The cultivation of chicory roots as a substitute for coffee, belongs rather to farming than to gardening. For Blanched Chicory as a winter salad,—and it makes an excellent one,—see the section on Salads. For the roots, sow not too early in spring, for fear of the plants running up to seed, when they become useless, and should be drawn, to prevent their exhausting the land needlessly. Mr. Cuthill describes chicory thus:—"The wild or uncultivated chicory is to be seen all over Britain during the months of July and August,—the stems rising to two or three feet, branching out with long dandelion-like leaves,—the blossom is a splendid Prussian-like blue, forming a bright star-like flower, and flowering in clusters; but where the roots are cultivated, and planted in rich earth, the stems will rise to six feet high, and, forming a large, bushy, and splendid flowering plant, and keeping in flower a long time, would form no mean ornament in a border or a shrubbery.

"The heaviest root I ever grew was three-quarters of a pound, and the length fifteen inches,—in fact, as large as a fine stick of horse-radish. The seed of chicory is not unlike its relative—endive, and ought to be sown about the 1st of June, round London, if the soil is light and in a warm situation; but should the soil be strong and retentive, it ought to be sown in the middle of May. The ground being well dug, a drill is drawn a foot apart, the seed sown as parsley is, and about the same depth (less than an inch). When the plants are up, thin them out to one foot apart in the rows, leaving, if possible, the broadest-pointed leaved ones. Nothing more is necessary than to keep them clear of weeds."

Jerusalem Artichoke—Helianthus tuberosus; that is to say, Tuberous-rooted Sunflower.—The flowers of this plant, however, are a horticultural rarity but very seldom

seen in England. By the exercise of his great skill, Knight obtained and exhibited them. They are scarcely worth the trouble they cost, being small yellow blossoms, something like that of the common coltsfoot a little enlarged. The name "Jerusalem" is probably a corruption of the Italian *girasole*, or turn-sun, *i. e.* sunflower; the usurped name "artichoke" (to which it has no right whatever) has reference to its flavour. Hudibras's couplet may be applied to the Jerusalem artichoke:—

> "As Hebrew roots are always found,
> To flourish best in barren ground,"

so the allotted position of this plant is generally to grow year after year in some neglected corner of the garden. It may be propagated by planting, in February or March, any small or mis-shapen tubers which the cook would reject, and which it is best to put into the ground entire, not cutting them into sets like potatoes, in rows from two to three feet apart, at eighteen inches in the row, and three inches deep. A common practice is simply to leave, in the autumn, a few tubers in the ground for next year's crop; as, like horse-radish, it is a vivacious and hardy-rooted plant, not easy to eradicate from a spot of which it has once had possession. Sharp frosts do not kill it. Manure is seldom bestowed upon Jerusalem artichokes, the trenching and cleaning the ground being mostly considered sufficient culture. The tall stems sent up in summer, from six to eight, or even ten feet high or more, may be taken advantage of to form a temporary screen, or to shade beds of delicate seedlings, &c., from the scorching sun of July and August. Take up the roots in November, and store them either like potatoes, in out-door pits, or like carrots in a dry cellar. Under circumstances only tolerably favourable, the crop will afford a heavy return of tubers.

Jerusalem artichokes are largely grown by some landed proprietors as winter food for the pheasants in their preserves. As a table root, some persons dislike them much, while others are as fond of them. They are

eaten boiled, either mashed with butter, or whole, and covered with white sauce before serving them. Take care, while peeling them, to have a basin of pump water at hand, to throw the raw artichokes in, one by one, as soon as they are peeled. This keeps the cut surface from contact with the air, and prevents it from turning black, which it otherwise would do, exactly as a pared apple turns brown. Many people do not take the trouble to store the roots, but dig them up from the ground, as wanted.

For Beet and Radish, see the section on Salads.

ESCULENT BULBS.

The Onion—Allium Cepa.—Onions, though thriving better in warmer climates than that of Great Britain, may still be produced here of such excellence, and in such abundance, as to render them a most important item of the gardener's catalogue. The culture of onions is of inscrutable antiquity. The bulbs are (approximately) biennial, being sown one season, and producing seed the next, when they ought to die (theoretically speaking), but do not always.

Light sandy soils are suitable to the health of onions, because such are also warm and dry; to bear fine crops they must also be enriched by manures, of which ashes, cinders, and soot, besides night-soil, liquid manure, blood, and powdered bones, are amongst the best. By constant application of these, aided by careful tillage, onions may be grown for several successive years on the same plot of ground, though such practice is contrary to the general theory of horticulture. Crops of onions may be obtained in summer and in autumn, by sowing in autumn and spring respectively. For spring sowing, let the ground be well manured, and dug in February or the beginning of March. In adverse seasons, little is gained by sowing too early; yet something ought to be risked in this respect, as the object is to let the bulb enjoy as long a summer as possible. Mark out the

ground into beds with a narrow alley between them, to admit of thinning and weeding. Let each bed contain five rows of onions; the distance from row to row, and therefore the breadth of the bed, will be determined by the sample of bulb required; for very large sorts, as the Tripoli, a foot is not too much, for small onions for household purposes, four or five inches are quite sufficient. To obtain small pickling onions, sow late, *i. e.* at the end of April or the beginning of May, broad-cast and very thick, on a piece of land which has not been manured. The drills must be shallow, not more than half an inch deep; the seed, if possible, of the previous year. After sowing, cover gently with the rake, and sift over the top a thin layer of cinder-ashes or lime-rubbish, or both, to which a top-dressing of soot may be added. Weed carefully between the drills with the hoe in dry weather; and after a shower, draw such weeds as spring up in the drills themselves. The mere stirring of the earth does good. Spring onions being in great request to be eaten raw in salads, as well as for other culinary purposes, the superabundant plants may be drawn from the rows as wanted. But great care should be taken, in so doing, not to disturb the rest, nor should the completion of the thinning be too long delayed. The injury to the general crop would be greater than the value of the spring onions so obtained from time to time. If fine Spanish onions are desired, it is a good plan entirely to sacrifice the spring onions, and to thin out the plants in the drill *with the hoe*, cutting them clean away, when they are about the thickness of a goose-quill, and leaving them about six inches apart. No further care is required than to keep them free from weeds. In September, when the bulbs are well formed, those plants in which the green leaves do not wither and droop, may have them gently turned back without breaking them, by passing a walking-stick or rake-handle over them. It is better to repeat this operation twice or thrice, than to perform it roughly, and once only. The onions, when taken up, should be spread on the ground to dry in the sun for

several days, according to weather. There are various modes of plaiting them in strings, tying them in bunches, hanging them up in nets, fastening them with packthread along the length of a stick, &c.; but in all cases, great care should be taken not to let them sweat in heaps, nor to store them in any way within doors till they are thoroughly dry and matured. Otherwise, they will either rot, or sprout immaturely. With this caution, exposure to the air and security from moisture are the great points of keeping them sound during winter.

For autumn-sown onions, sow in the middle or towards the end of August, as before. In fine open weather, during either December, January, or February, remove carefully all the superabundant plants, taking pains not to injure their roots, and leaving the rest six or eight inches apart. Transplant the surplus onions into like drills on well-manured beds, planting them, not too deep, by means of a line and a small dibble. Take care not to bury the future bulb of the onion, and settle the earth about them by a watering afterwards. These will come nearly as fine and as early as those that stand where sown without transplantation. The Spanish, the Tripoli, and the Silver-skinned, are the kinds best adapted for autumnal sowing and transplantation; but the Globe onion may also be grown very fine in this way. Some leading horticulturists have recommended what may be called a modification of the transplanting mode. They reason that, as the onion, in the south of Europe, acquires a much larger size during the long, warm summers there, in one season, than they can in the colder climate of England, it would follow that *two* summers in England might produce nearly the effect of one in Spain or Portugal. Therefore, seeds of the Spanish or Portugal onion are sown at the usual period in the spring, very thickly, and in poor soil; generally under the shade of a fruit-tree; and in such situations the bulbs, in the autumn, do not much exceed the size of a large pea or hazel-nut. These are then taken from the ground, and kept till the following spring, when they are planted out

at wide and equal distances in rich light soil. If all goes well, they afford plants of superior strength and vigour to those raised immediately from seed, and often exceed five inches in diameter. But, unfortunately, many of them, instead of increasing to those dimensions, send up their flowering stems, and set theory at defiance. The system of autumnal sowing and transplantation is here recommended in preference.

The spring-sown crop, when gathered, will mostly contain a small proportion of plants which do not bulb, or of what are called "goose-necked" onions. The best way of disposing of these is to replant them at once in a row by themselves, just so close together as not to touch. They will be useful to draw during winter, for soups, ragouts, &c., as well as subsequently to supply scallions, or, what comes to the same thing, a substitute for scallions, whether the term is interpreted to mean the green tops of onions which do not bulb in the spring and the shoots from old bulbs of the preceding or former years, or the Welsh onion, or *Ciboule*, a plant to which some little mystery is attached, serving exactly the same culinary uses. The real Welsh onion (*A. fistulosum*), of which there are several varieties, is a perennial plant, which does not bulb, and which may be grown from seed, though best propagated by dividing the tufts of roots. We may look upon it as a larger kind of chives.

The leading varieties of onion grown from seed, are the White Spanish or Portugal, excellent for main crops, a good keeper, may be sown either in spring or autumn; the Globe or James's keeping, large, spherical, a very good keeper; the Deptford, brownish, moderate sized, good keeper, only sown in spring; the Blood-red, of some repute for its diuretic virtues, strong in flavour, not very large, excellent keeper, sown only in spring; the Tripoli, sown in August to have it fine (this and the following are the largest onions grown), light red, tinged with green and brown, not a good keeper, being watery and deficient in solidity, but mild, sweet, and delicious, while it lasts, admirably adapted for stewing whole; bulb

remains dormant a shorter time than most other onions, and recommences growing a few weeks after it is taken from the ground; the Madeira, large, mild, and pale, possessing nearly the same qualities as the above, a great favourite with French gardeners, sown in August; the Silver-skinned, a handsome onion with a milky-looking skin, veined with green, which most books and lists erroneously describe as "small;" whereas, sown in autumn, it attains a considerable size; but being mostly used for pickling, is therefore habitually sown late in spring on poor soil, in order to dwarf it. The Silver-skinned is not a good keeper, but is sweet and delicate, and when large, answers the same purposes as the Tripoli, especially for dishes served with white sauce: the Lisbon belongs to the Tripoli class; the Strasburg is a brown oval onion, a good keeper, and serviceable for general spring-sown crops.

Onion bulbs, for seed, may be planted in a row, in rich earth, about a foot apart, during the first open weather in January or February. Tripoli onions are safest in the ground at the end of November or early in December; they will run a greater risk of injury from rotting indoors than from frost without. Fix a strong stake at each end of the row, for the purpose of fastening strings to support the flower-stems, which would otherwise be liable to be broken by high winds and heavy showers.

The Potato-Onion differs essentially from the above-mentioned varieties, and might almost claim to be considered a separate species. It is of high antiquity, being supposed to be the kind that was worshipped, or held in reverence, by the ancient Egyptians. Not only does it come to maturity earlier than the rest, but it is remarkable for the peculiarity of never producing flowers or seed. So unexceptional is this habit of its growth, that few gardeners, if any, can say they have ever seen a potato-onion in flower. If they think they have, without closely examining the case, they were probably deceived by some stray shallot, that accidentally got mingled with the crop. This variety is therefore propagated *only* by

the root. Very small bulbs increase to large ones; large ones subdivide into a cluster of bulbs of various sizes.

An excellent, and easily remembered garden rule, is, to plant potato-onions on the shortest day in the year, and to take them up on the longest. This early maturity is taken advantage of by the stewards and cooks of vessels that are outward-bound for long voyages, when sailing at the end of June, or the beginning of July. By this means they are well provided with a stock of an almost necessary vegetable. With potato-onions, followed by autumn-sown varieties, and those by good keeping spring-sown sorts, a sufficient successional supply of onions may be kept up nearly the whole year round. And, not only is the potato-onion supplemental to the common sorts, in point of time, but also in constitutional resistance to adverse seasons: that is, when other onions,—especially those sown in spring,—fail, either from ungenial weather, the attacks of insects, or defective seed, the potato-onion will produce a heavy crop. On the other hand, it sometimes happens, though much more rarely, that the potato-onions do not turn out well in seasons when Spanish, Globe, Blood-red, and even Tripoli onions, are both abundant and of good quality.

For potato-onions, give the land a liberal dressing of well-rotted manure during the third week in December; dig it in, preparing the ground well, breaking all the clods, and picking out carefully all the roots of perennial weeds. As near as possible to St. Thomas's Day (*on* that day, if you can), after having raked the ground, prepare to plant the bulbs by marking out beds four feet in width, with a foot-wide alley between each bed. Fix your line along the bed, six inches within its outer edge, and along this line set your onions, nine inches apart, *on* the ground, gently pressing them into the soft earth, just deep enough to keep them upright. Set another row parallel to, and a foot apart from, the former; and then a couple more rows, which will complete the bed. You will thus have four rows, a foot apart from each other,

and six inches from the outside edge of the bed. The plants might be, and frequently are, planted at smaller intervals, both from row to row and along the rows; but nothing is gained by crowding the plants or stinting them for room. It may be laid down as a general rule, that all young gardeners plant too thickly. One of the last horticultural maxims learned is, that fine and well-grown specimens are obtained in proportion as they are allowed light, air, and an extended area of ground to feed on.

When the bulbs are thus placed in their position on the bed, it will be easy for the gardener, by walking up the side alleys, to draw the earth to the rows of onions from each side, till their crowns are fairly covered. In that state they will be left to stand the winter. If frost has already set in on St. Thomas's Day, plant your potato-onions as soon afterwards as the weather will allow, remembering always, that the sooner the better. It is a common fault to plant onions too deep; observe, therefore, that the bulb ought not to have more than half its depth below the level of the ground. Supposing it a terrestrial globe, the soil should just come up to its equator. In spring, when the bulbs are firmly rooted, and the leaves from the crown have shot three or four inches, with a hoe take advantage of a dry sunshiny day (that weeds may wither), to draw back the earth which was heaped up against the roots, reducing the soil to its original level, and leaving the bulbs half exposed to the air. Nothing more than occasional hoeings and weedings will be required. If grubs and maggots are apprehended, watering with lime-water will be a useful precaution; but if they have once eaten their way into the bulb, scarcely anything will touch them.

At the end of the first fortnight in June, symptoms of ripeness will be visible, in the flagging and withering of the leaves. When the original bulb has divided into a large cluster, the central knot will be ripe several days before those next the ground. It may be removed by simply lifting it out, which will expose those which remain to a greater share of sunshine. Potato-onions,

like the seeding sorts, should be well weathered before storing, which will be sufficiently effected, when they are dry, by hanging them in bunches in any dry airy shed, or even in the open air, under the projecting eaves of a cottage. Monsieur Mauduit, of Quimperlé, who has long been a successful grower of this variety, advises, as a mode of preserving them, to cut off the stem about an inch and a half above the neck of the onion, to split the end which remains into four pieces, quite down, but without wounding the bulb itself, and to leave it to dry in this state. It will be seen that directions to earth-up potato-onions during their growth are directly the reverse of what ought to be done. The potato-onion is well-flavoured, and is applicable to all the culinary uses for which onions in general are employed.

The Shallot—Allium Ascalonicum.—A near relative of the above, and best cultivated on the same system, only that it may be planted at distances one-third less each way, supposing the mode of propagation by bulbs (which is the common one) to be followed. Some defer planting till the spring: but the nearer the date of the operation can be made to coincide with that of potato-onions, the more satisfactory will be the result. In fine summers, however, shallots bear abundance of seed, and ripen it well. This seed, sown either in autumn or spring, will produce a sound and plentiful crop, with which the only fault a gardener could find is, that the sample is not even, neither all of a size nor all of a colour, in consequence of variation amongst the seedlings. But, in fact, the varieties of shallot are not very distinct: and a tolerably-sized bed sown with the seed, will pretty nearly furnish specimens of them all. In planting, subdivide the clusters of roots as much as possible, without injuring them. Store like other onions. Shallots are mostly used as mere condiments, in consequence of their small size; but they make a delicious dish stewed whole in gravy, as soon as they become mature in July.

The Leek—Allium Porrum.—A so-called biennial, which is grown in France to an enormous extent, and

which, though largely cultivated in England, is still not so widely spread as its hardiness and its merits deserve. With the French, it is an absolutely necessary ingredient of the soup on which the great body of the nation lives; but it also makes an excellent table-vegetable, boiled in salt in water, and served with white sauce, exactly like asparagus. It is at its best, too, in the most difficult time of the year; namely, from the middle of March to the middle of May. At the same time that it possesses many of the qualities of the onion, it has also the advantage of thriving well in colder, wetter, and more ungenial climates, like those of Wales, Ireland, and Scotland, as compared with England, besides doing well on damp, cold soils. It is, therefore, a root which deserves the patronage of the philanthropist and the legislator. The London Flag and the Musselburgh are improved varieties of the common leek.

Leeks are almost always sown on a seed-bed and transplanted afterwards. The reason is, not only convenience, but because, as leeks bear deep planting, which onions do not, they are, therefore, purposely planted deep, to have a greater length of blanched stem. The earlier the sowing and transplantation take place, the finer the specimens. In our climate, late-planted leeks, though useful in their way, remain poor and diminutive. Sow, therefore, at the end of February, or as soon after as may be, a patch broadcast and tolerably thick, in good light soil, well manured. It is convenient to make their transplantation follow the removal of some early crop,—for instance, of autumn-planted lettuces, or Early York cabbages. As soon in June as possible, transplant the leeks in rows into beds four feet wide. The distance of a foot from row to row will give four rows in a bed, with an outer margin of six inches to spare on each side. The young plants should be not less in size than a large goose-quill; if even larger, it will do no harm. Take them up carefully from the seed-bed, without breaking the fibres of the roots. Cut off a few inches of the tops of the leaves, to prevent them from being top-heavy and

swaying over, but do not cut the roots. The bed will have been well dug and manured. Plant the leeks, by line, six inches apart in the row, with a long, stout dibble; *i. e.*, make a perpendicular hole some six or eight inches deep, according to the strength of the plants, and drop a plant into each hole; push into the hole, with the end of the dibble, just a little earth to cover the fibres of the root, and leave the leek standing loose in the hollow tube of earth, like a candle in a candlestick that is much too deep and too large for it. When the bed is completed, give the whole a good watering, which repeat daily, if the weather continues dry, till you see that the plants have retaken root. Drought is the greatest enemy to a fresh-planted crop of leeks. Afterwards, as weeds start, cut them up with the hoe in dry weather. Although your leeks may be fine and tempting in November and December, resist the inducement to make use of them then, unless you are absolutely obliged to do so. Later, in March, and subsequently, not only will they have greatly increased in size, but they will have matured their sugary and mucilaginous juices, and have become better flavoured, tenderer, and more nutritious. A very little management will enable you to hold this crop in reserve till the last.

Extra-sized leeks may be obtained by planting, the last week in May, a single row instead of a bed, of plants from nine inches to a foot apart, leaving the ground unoccupied for eighteen inches on either side of the row. During fine open Christmas weather, the leeks may be earthed up, like celery, halfway to the tops, which will much increase the length of the portion blanched. It is worth while to save a few fine leeks, of a good sort, to stand for seed. A stake should be planted close to each, to support the flower-stems. Cut the heads as soon as the capsules of seed begin to open, and dry them well in the sun, spread out on a piece of canvas. Some gardeners prefer to keep their leek-seed in the husk and head. Seeds retain their vitality better in that state, if they are kept perfectly dry, and free from all mouldi-

ness; but in such cases, to prevent loss by shelling out, the heads should be inclosed in linen or paper bags, with a few holes torn near the top, to allow of ventilation.

Chives or *Cives—Allium schænoprasum.*—A small species, which does not bulb, being more like a cluster of miniature leeks than a tuft of onions, and which is mostly, and properly, spoken of in the plural number. It is one of the "fine herbs" of which, chopped very small and mixed with parsley, &c., such an enormous consumption is made in Paris, for sprinkling over chops, steaks, salads, cold fish, and many other dishes, besides entering into the composition of *omelettes aux fines herbes.* In England, chives are useful to throw into broths and stews. In early spring, the dwarf stems separated, and with their outer skin peeled off, serve excellently as spring onions, to eat raw. A few tufts taken up in mid-winter, planted in flower-pots, or a mignonnette-box, and set in some snug warm corner in the kitchen or bakehouse, will afford a welcome and early supply before spring onions are to be had. The roots so treated may afterwards be planted in the open garden.

The bright green of their delicate leaves, and the thickness with which they rise from the ground, render chives quite an ornament to the plot of sweet herbs. They may be planted either as an edging, instead of box, in neat parallel rows, or they may be made to form any fanciful device, such as a true-lover's-knot, or the ciphers 1855, the date of the year of their establishment on the spot. Chives may be cut (with a *sharp* knife or scissors, and to the level of the ground) several times in the course of the season. Indeed, successive portions *must* be cut down in this way, if a succession of young shoots are wanted. Chives flower freely; but they are best propagated by dividing the roots into separate stems, and planting them in rows, or ornamental curves, half an inch from stem to stem. They will soon furnish thickly, and form a continuous line of verdure. They

may remain for a long period without renewal or removal.

Garlic—Allium sativum.—A member of the onion family, which, though consumed in great quantities, and cultivated on a large scale in the kitchen-gardens of the south of France, and throughout southern Europe generally, is better known in England by name than by sight. Many people express their horror of garlic who have never tasted it, and who would not recognise the plant if laid before them; but who also relish samples of London and Parisian cookery, which they would refuse if aware of the ingredient that serves to heighten the flavour of the sauce. Prejudices in eating and drinking are exceedingly difficult to eradicate; and untried articles of diet are the objects of the strongest prejudice. But garlic, besides being in great repute as a tonic and stomachic antidote to the debility caused by long-continued hot weather, is also recommended as affording relief to nervous, hysterical, and convulsive affections.

Garlic differs from the above-described species of onion, in having linear or flat, instead of hollow or fistular, leaves. The mature bulb, too, separates naturally into ten or a dozen small ones, each of which is what the cooking-books call "a clove of garlic." The whole are inclosed in an outer skin, which turns whitey-grey when dry. For increase, these cloves are planted at potato-onion time, or even earlier in autumn, so soon as October. Some replant them directly the clusters are ripe, though planting *may* be deferred till February or March. Set the cloves an inch deep, by means of the dibble, six inches apart, in rows that are nine inches or more asunder. Warm rich soils suit them best. Weed and hoe as the plants advance. One crop of garlic is enough for most English gardeners; but on the Continent, the autumnal and the spring plantings give two successive crops, both which are welcomed. Garlic has the habit of sending up a stem which bears at the top, instead of flowers, a bunch of small bulbs inclosed in a conical sheath. To arrest the growth of these, and

to throw the strength of the plant into the ground bulb, it is a good plan to tie the leaves and stem into a knot as they advance towards maturity. When the leaves are withered, the bulbs are taken up, left to dry in the sun, tied in bunches, and then hung up in any dry airy place.

Rocambole—Allium Scorodoprasum.—A few roots may be allowed standing-room as a curiosity, and as examples of viviparous plants; *i. e.* those which habitually, instead of flowers and seeds, throw off buds, or bulbs, which are only a peculiar modification of buds. Its mature root is a compound bulb, like that of garlic, and will answer the same purposes. Rocambole produces bulbs on the top of its stem, and in the axillæ of its leaves. These bulbs will serve to propagate the plant.

Tree-onion, Bulb-bearing Onion; Oignon à tête, and Oignon d'Egypte, of the French.—*Allium Cepa*, var. *viviparum*, regarded as a viviparous variety of the common onion, which is supposed to have acquired in Canada (where the climate is too cold for onions to flower and seed) the habit of bearing bulbs instead, which habit it retains in England and France, and even, as one of its names implies, in Egypt. However, these supposed changes of constitution are suppositious, and nothing more. The tree-onion has found favour with many growers, although it is rather strong and coarse, and easily rots in winter, if exposed to damp. But it unites the advantage of a *certain* crop with economical culture. The little seed-bulbs, planted in early spring, grow to the size of an ordinary good-sized onion; while the large onions, planted out, furnish plenty of seed-bulbs for the following season, besides producing at the root two or three middle-sized offset-bulbs, which are found when the original roots are taken up. The bulb-bearing stalks require to be supported by sticks, to prevent their being broken by the weight of their heads. The little onions may be planted in beds; the large ones are better in a single row.

The Subjects of Horticultural Experiment.

The Oca—Oxalis crenata.—Persons enjoying means and leisure may laudably amuse themselves by testing the value of new alimentary plants. They must be content to draw a good many blanks before they light on a single prize; but they will not be discouraged when they remember the tardiness with which the public discovered and acknowledged the merits of two such culinary treasures as seakale and rhubarb have proved themselves to be. If the amateur fail, he will have failed in a good cause, and the failure even will be honourable. If he succeed, he will have the glory and the satisfaction of rendering a service to the community at large.

The *Oxalis crenata*, or Notched Wood-sorrel, a tuberous-rooted esculent, cultivated in Peru under the name of Oca, was introduced into England from Lima in 1829, and was rapidly spread over the continent. It grows freely during summer in the open air, but is destroyed by frost. In autumn, it forms numerous yellow underground tubers, from the bigness of a marble to a large hen's egg, which last size they rarely attain. They are edible, contain a good deal of saccharine matter, and their number makes up for the deficiency of their volume. It has been proposed to use these tubers as potatoes, the foliage in salad, or to be cooked in the same way as sorrel, and the stems in tarts. This abundant crop of tubers is obtained by the process of earthing up, or rather by the continual layering of the stems. Oca is of easy cultivation. The tubercles can be forwarded on a hotbed in March, to be planted out in May; or they may be planted where they are to remain in the middle of April. Oca may also be propagated by cuttings, which readily take root. Light rich earth suits it best. The distance between the plants should be about a yard. A single row down the middle of a bed four feet wide will suffice to cover the ground by the end of the season. Earthing must be commenced when the shoots are from

two to three inches long. The earth is first thrown over the centre of the stools, spreading them separately to make them take a horizontal direction. As they increase in length, a moderate quantity of fresh mould is drawn over them, and the same operation is continued regularly till September, the season when the tubercles begin to form, which are taken up as late as possible, even after the stems are destroyed by frost. The dead foliage may then be cut close to the ground, and the bed covered with a layer of dry leaves, under which it has been found that the tubers will keep and improve. When taken up, they keep well during winter buried in quite dry sand, in-doors; but they must be protected from mice, which are greedy of them. The tubers, when cooked, have a pleasant flavour, with a slight acidity common to the genus; which may be removed, for those who dislike it, by changing the water in which they are boiled.

The Oca has flowered, but does not produce seed, in Europe, which it would be desirable to make it do, in order to originate varieties that might prove hardier, and produce larger tubers, than the parent. Oca-beds spontaneously produce a white variety; certain stools bear white tubercles exclusively, although yellow ones were planted; and the change of colour is perpetuated in the offspring. The Red Oca, sent to Paris in 1850 from M. Bourcier, the French consul at Quito, is also a variety of the *Oxalis crenata*, from which it differs in the colour of its tubercles, whose skin is of a bright-carmine red, and, in its more slender stems, tinged with reddish violet, and remarkable for their extreme flexibility. In France, its tubercles have not proved either larger or more abundant than those of the old yellow variety, although, according to M. Bourcier's statement, the Red Oca is considered in Peru as much preferable to the Yellow Oca as an alimentary plant. The above details are borrowed from the *Bon Jardinier* for 1855.

The Chinese Potato or *Yam—Dioscorea Batatas.*—During the spring of the present year, the gardening periodicals have contained frequent advertisements from

the leading nurserymen of London and the provinces, announcing tubers of this plant for sale, and recommending its trial as an esculent root. The *Gardener's Chronicle* of December 23rd, 1854, gave a lucid account of the experiments hitherto made in France. Speculative gardeners may like to continue the investigation; and they may be encouraged by the circumstance that the chances of success, in the climate of Great Britain, are greater, with new vegetable introductions from China and Japan, than from almost any other country on the face of the globe, California alone, perhaps, excepted.

The Dioscorea Batatas, wrongly named *Dioscorea Japonica* (in French, *Igname de la Chine*), was sent to France, some five years since, by M. de Montigny, the French consul at Shanghai, a gentleman who has rendered great and honourable service to his native country, by the transmission to it of objects of natural history unknown before. The plant has annual stems and perennial roots, or, more accurately speaking, rhizomes, which are full of starch and are slightly milky; they are true subterranean stems, which, instead of rising or creeping along the ground, descend perpendicularly to the depth of a yard or more, according as the soil is more or less permeable. The stems proper attain the length of from three to six feet; they are cylindrical, of the thickness of a stout goose-quill, twisting as they climb, from left to right; of a violet tinge, speckled with small white spots. When left to themselves, they creep along the ground and take root very freely. The leaves are in general opposite, triangularly-heartshaped; their length and breadth much alike, varying from one and a quarter to two and a half inches; their surface is smooth, shining, and of a deep green. The flowers are diœcious,—that is, the male and female flowers are distinct, and also grow on separate plants: they appear in small pale-yellow bunches, from the axillæ of the leaves. The rhizomata, or roots in popular language, vary in thickness and length, according to the vigour of the plants, and probably also accord-

ing to the nature of the soil. In general, these roots are club-shaped, of the bigness of a man's wrist at their thickest part, tapering upwards gradually till they are hardly so stout as one's finger. They are covered externally with a light-brown skin, through which numerous radicles shoot forth. The same plant is capable of producing several rhizomes, although in general it has but one. In France, roots have attained more than two pounds, but their average weight there is considerably less.

The Chinese, it appears, cultivate this species on a large scale, although the depth to which it penetrates would appear to offer difficulties. It produces abundantly, and the country people feed on it, exactly as the peasants of the north of Europe live on potatoes. To propagate the plant, they lay aside the little roots, preserving them from the frost in heaps covered with straw and mould. In spring, the roots are planted by laying them in furrows, in a horizontal position. The plant also grows readily from cuttings. Full details of its native culture are still wanting.

M. J. Decaisne, in this year's *Bon Jardinier*, expresses strong hopes that the Chinese yam will turn out useful: and he has not formed his expectations hastily; the plant, therefore, as yet unseen by the great majority of growers, has nevertheless become everywhere an object of attention to the horticultural public. Certainly, among the plants proposed to replace the potato, none appear to have so good a chance of success as this. The mode of culture which has as yet answered the best in France, consists in cutting the roots into moderate-sized fragments (preferring the heads, or noses, of the roots), and starting them on a hotbed, in little pots, in the month of April, planting them out where they are to remain, in light rich soil, as soon as all fear of frost is over. The plant has a tendency to plunge its roots perpendicularly into the ground: consequently, it does not suffer from the short confinement in a pot, to which it is subjected. It seems to like being watered; at least if a judgment

can be formed from the stationary condition of its vegetation during drought. The produce should be taken up as soon as possible.

It would be out of place here to enter into fuller particulars. Enough has been said to indicate to the experimental gardener the useful field of investigation that lies open before him. The pursuit of such a desirable object will prove a pleasure in its very exercise.

ESCULENT VEGETABLES—THE CABBAGE TRIBE.

The Garden Cabbage—Brassica oleracea, in many varieties; but the varieties are more numerous in name than in reality.—Many professional gardeners have sought to immortalize themselves, or to gain exclusive custom, by advertising new cabbages, which, admitting them to be of undoubted excellence in their way, bear so strong a family likeness to some of the old-established types, that nothing but extreme good-nature can admit them to be either improvements or new. Consequently, only a few sorts of acknowledged merit will be specified here. It is advisable to buy the seed of this tribe of plants from respectable nurserymen, in preference to growing it oneself: as, to insure its trueness, the seed-bearing plants ought to be placed together in as large numbers, and in as isolated a position, as possible, to prevent insects, or even the wind, from crossing the race with pollen borne from flowers of some other variety. Cruciferous vegetables in general have a tendency to be thus bastardized; and the inconvenience is only to be avoided by taking great precautions, which are not always possible to small gardeners. A neighbour's bees, or a row of run-up neglected winter-greens, may spoil what would otherwise be a valuable sample of seed.

The Early York has hardly its superior for a private garden. Its flavour is of extreme delicacy, while its moderate size renders it both convenient and attractive, though market-gardeners would undoubtedly prefer it, if

larger and heavier. But even as it is, they are far from neglecting it, as is proved by the waggon-loads of "summer cabbages" which reach Covent Garden Market at the beginning of June. To this family belong the Early Dwarf York, the Bullock's Heart, and others. The Early Battersea, a larger, and a somewhat later, cabbage, is excellent for summer and autumn supply. The Sugar-loaf, of which there are later, earlier, longer, and shorter varieties, is a favourite with many, though not so with the writer of these pages. It is a good-looking cabbage, presentable at market, with a large portion of tolerably-solid well-blanched heart; but on cooking it, it is apt to turn out tough, and only of second-rate flavour. Persons who are choice, and difficult about the cabbages that are served on their tables, will find varieties that will please them better than the Sugar-loaf. It is a useful sort, nevertheless, being hardy, and affording abundant supplies. The Paignton is a good cabbage, not generally known. The Vanack, ditto ditto; Atkin's Matchless, dwarf, early, highly approved; the Fulham, good; the Schulford or Paradise, large, early, excellent; the Early Brompton, good; Tiley's New Early Marrow, very tender, much approved; Shilling's Queen, very dwarf, early, excellent; Wheeler's Imperial, large, early, good; Early Nonpareil, large veins, early, excellent; Preston's Victoria, large, early, highly recommended; besides a host of rivals, with none of which a reasonable cook ought to be dissatisfied, when the gardener presents them; all these merit trial. Peculiar soil, situation, or culture, may develop the excellences of some more than of others, and it is probable that they will not give equal satisfaction under the same invariable circumstances; but the amateur, after having gone the round of these, as well as of the newer and the very newest novelties, will, perhaps, return at last to his old love,—the Early York,—whose name should be printed in letters of gold, if our printer had but golden ink to do it with.

The Field Cabbage, Drumhead Cabbage, Cattle Cabbage, called in Cornwall the Flatpoll, is a most excellent

variety, of great distinctness. It is so capital, that no kitchen-garden ought to be without a few score plants for autumnal and winter use, if it is not grown largely in the fields close by, and to be had without troublesome forms and difficulties. Though attaining enormous weights, it is not coarse, when well grown, but delicate and sweet. It is hardy, too; and may be depended on, like a faithful wife, when storms arise and other friends fail. Its quality and flavour being entirely different to those of the admirable Savoy cabbage, the two varieties ought not to be looked upon as competitors, but each should be received and fostered with equal favour, which can scarcely be too great. The Red cabbage, or Red Dutch, is little used in England except for pickling. On the Continent it is generally eaten in the shape of a stew or fricassee (especially during Lent, when it forms an excellent meagre dish), at all times of the year when it is to be had. For pickling, cabbages are best fit in August; because then, owing to the dryness of the season, they are less watery, and absorb the vinegar and spices more readily. Therefore, for red cabbages to pickle, sow in the middle of August, to stand the winter and be ready at the close of summer till the end of autumn. For red cabbage to fricassee during winter and Lent, sow early in the previous spring. These latter plants, of great convenience for Roman Catholic families, will not turn out so fine, and often not so solid, as those sown in autumn.

The cabbage tribe in general are notorious as gross feeders. They like fresh, rank manure, and plenty of it. Hence, they prove excellent precursors of crops which do not thrive after its recent application. They are all likewise subjected to transplantation. Sow in separate seed-beds, noting the name and date of each variety. Sow Early Yorks at least twice a year; in early spring and towards the close of July. The nineteenth is a mystic day with certain gardeners; but the truth is, that the latitude of the spot has a great deal to do with it. Others restrict the principal sowing for the early and

main summer crops, from the 5th to the 12th of August; and again it is the truth that much depends upon the time of pricking out, or first transplantation, and of final planting out, as well as on the date of sowing. A prudent gardener will make *several* successive prickings-out and plantings, in order not to have all his cabbages of the same sort come on at once. In neighbourhoods, as about London, where coleworts (or cabbage-plants half-grown, before they have formed their hearts) are in great request, on or about Midsummer-day a little Early York seed may be sown for a first crop. To sell, coleworts are a profitable crop, as they occupy the ground for so short a space of time; but the demand for them is not universal. In some parts of England they are little used, although so wholesome and delicate a vegetable. In all cases, it is understood that after pricking out and planting, which will always be in highly-enriched soil, the ground is constantly hoed and kept free from weeds. The distances must entirely depend upon the kinds, and upon the time of year also. The gardener will be guided by his own common sense, never forgetting the golden rule, "Better a little too far apart, than a little too crowded." A few of the earliest Early Yorks may have their hearting assisted by tying up their leaves, towards the close of May. Where coleworts are used, summer cabbages may be planted out twice as thick as they are to stand for hearting. By drawing at the proper time, every other row, and every other plant in each remaining row, the crop of coleworts is exactly so much gained. Remember only to manure well beforehand, and to hoe well, and to earth up neatly, afterwards. In cutting a hearted cabbage, *never* leave the stump standing, to make sprouts by-and-by. It is an idle and slovenly practice, infinitely more honoured in the breach than in the observance, and a detestable piece of bad gardening. The gardener who cannot furnish delicate greens and sprouts, without slitting his cabbage-stumps crosswise, and leaving them three or four months to disfigure the place they occupy, is at best a mere ground-scratcher,

who has yet to learn the refinements of his elegant art. Excuse this sentence, as a word to the wise.

Of Savoys, there are the Large Green and the Dwarf Green. Sow in April or May; to have fine specimens, plant out not later than June. July and August will furnish middle-sized and small heads, that will prove very acceptable in winter and spring. Quite late plants will not heart at all, but will only run up on the return of fine weather. It is not usual to sow Savoys in autumn. There is a vulgar idea, which is nothing but an idea, that Savoy cabbages are improved by exposure to frost.

Brussels Sprouts.—A vegetable delicacy of easy culture. Treat like Savoys, only sowing them a little earlier, and planting them at once in the rows where they are to stand. The plants will run up from two to three feet high, forming a little Savoy-like cabbage at the top. As summer advances, the side-leaves will drop off (they may be aided, not too soon, by stripping), and from the bud at the root of the footstalk of each, will appear a miniature cabbage, which is the Brussels sprout. The small cabbages from the crown of the stems are best cooked separately. The seed is usually imported from Belgium; as false Brussels sprouts are unfortunately common, and are mostly good for little but to throw to the pigs.

The Choux de Milan, or Milan cabbages, only require mention here, to state that they are subvarieties (and some very inferior ones) of Savoy, which have no right to ask for admission into gardens where good Savoys and Brussels sprouts will grow. Some Choux de Milan *are* Savoys.

Couve Tronchuda, or *Portugal Cabbage;* in French, *Chou à grosse côte.*—An excellent cabbage, when taken at the right time, but hard and tough when cut in certain states. It (or rather the seasons which influence it) is somewhat capricious; hence, different people look upon it with different degrees of favour. Portugal kale is best after a continuance of mild, cloudy, showery

weather; for instance, in spring, after a mild winter. This cabbage does not form a heart; but, in recompense, the veins and footstalks of the leaves are of extraordinary thickness, being swollen more than is seen in any other variety of the tribe. This general succulence of habit, added to its delicate glaucous-green colour, which often becomes yellow in the centre of the plant, as if it were blanched, gives it a very prepossessing appearance. It is usually directed to strip off the green part of the leaves, and to eat the ribs and footstalks, boiling and serving them like seakale. But when they are sufficiently full-grown to be so treated, they are mostly tough and hard. Couve Tronchuda has thus been brought into disfavour. The middle part of the plant, which ought to be the heart, is excellent for table use; it is fleshy, delicate, sweet, tempting to the eye as well as agreeable to the palate, tasting something between cauliflower and sea-kale, and therefore possesses all the good qualities of cabbage without the strong flavour and smell with which that vegetable is sometimes chargeable. In cooking, take care to throw the heads into a *large* vessel of *boiling* water. Sow from the end of May to the end of June. A single sowing will suffice, as from the same seed-bed three or four transplantations may be made during the summer, some of which will turn out better than others, according to the chances of the season, but very frequently the latest the best. The plant is not particularly tender in ordinary winters; but if a small space on a south border can be spared for a late setting of Portugal kale, with a few handlights to cover them, the gardener will find himself repaid in spring by some excellent dishes of delicate greens.

Borecole, Scotch Kale, &c. &c.—Coarse hardy greens, but whose hardiness has been much overstated, admissible into gardens rather as specimens than as crops, except in situations where nothing better can be grown; and better things will grow almost everywhere that kale will. The group is in favour with cottagers in sequestered

maritime situations, because it furnishes sprouts for themselves and leaves for their cow or pig. It would be a real kindness to such persons, were their clergyman or their landlord to present them occasionally with a few score young plants of Drumhead, Savoy, and Battersea cabbage.

Cow Cabbages, Thousand-headed Cabbages, Tree Cabbages, Choux Cavaliers, and others of the kind, that run up like palm-trees,—one of them is called the Chou Palmier,—beneath the shade of a plantation of which a man may sit in his arm-chair and smoke his after-dinner pipe,—this is no exaggeration,—these have no place in the garden proper. They belong to the field, or to the cottager's plot, where he may strip off a barrowful of leaves for the daily use of his cow. They have as little relation to horticulture as that botanical curiosity the Wild Cabbage, which has grown for ages self-sown and unimproved in the chinks of the perpendicular chalk-cliffs of Dover, in England, and of its opposite neighbour, Cape Blanez, in France.

Cabbage Soup; an excellent, wholesome, and nutritious article of diet.

Wash thoroughly, and shred very fine (as if for making pickled cabbage), the hearts of one, two, or more (according to size), summer cabbages, or of a delicate Savoy. A good Drumhead answers admirably. Slice and mince some carrot, turnip, and two or three leeks, all very fine, and mix well in a bowl together all these shred and chopped vegetables.

Have ready a good broth; pork or beef boilings will do, when not too salt; but the French prefer a broth, or *bouillon*, made of *a variety* of meats boiled together; for instance, a piece of lean beef, a knuckle of veal, a *small* piece of fat salt pork, and a bit of the neck or shoulder of mutton These meats need not be cooked so much as to render them uneatable either cold or warmed up in a stew, or even served hot at the same dinner at which the soup appears. For these purposes they are invariably used in France, instead of being

thrown away, as broth meat too frequently is in England.

When the meat is enough done according to your judgment, take it out, make the broth boil galloping, and throw into it your bowlful of well-drained chopped vegetables. Let them boil away, without the lid on, till the cabbage, &c., is *quite tender*, but not cooked to a mash.

While the vegetables are boiling, slice and chop one or two large onions (if more convenient, they may be prepared beforehand); fry them *in butter* to a rich brown. Add them to the soup, and mix them up with it.

Cabbage soup-maigre, for abstinence days, is made in the same way as above, using water instead of broth, and often adding to the cabbage a large handful of chopped sorrel,—an excellent purifier of the blood. A larger quantity of fried onions is used; and, at the time of adding them to the soup, a small basinful of grated crumb of bread is also incorporated with it, to make the whole more substantial and nourishing.

Kohl-Rabi, or *Turnip-rooted Cabbage*.—A coarse vegetable, a favourite in German kitchens, which are more liberal than discriminating in the abundance of dishes they send to table. Sliced cooked Kohl-Rabi is there served in the centre of a dish, with the boiled leaves around it, as coleworts or spinach. In England, the green part mostly finds its way to the rabbit-hutch, while the false bulb is boiled and served whole, and sliced and eaten with butter by those who partake of it. The flavour is only agreeable to those who do not dislike a strong taste of cabbage. Kohl-Rabi was known to Dodonæus. At p. 552 of his Herball, we find: "The fourth kinde (of colewurtes) hath grayish or white greene leaues, as the other white colewurtes haue, but they remayne still without closing or gathering to a rounde head or croppe; yet it beareth a great rounde knoppe like a turnep, the which groweth right under the leaues, euen hard upon the ground, and is white within lyke

a turnep, and is euen so drest and prepared to be eaten."

There are several varieties of kohl-rabi, some purple and some green. A row of each may be allowed admission in a well-stocked garden, as the curious appearance of a coloured turnip on a short stem, quite out of the earth, and surmounted by a tuft of leaves, renders them both striking and singular. Kohl-rabi bears frost well. The best thing it produces is the shoot which rises from the centre of the bulb in spring, when the plant would run up to flower. These, cut and boiled like sprouts, are really palatable. Of course, this shoot exhausts the bulb so as to make it nearly worthless. Sow at the end of May or the beginning of June, and plant out, at one or two doings, in July and August.

The Cauliflower—Brassica botrytis.—Many people confound cauliflowers with broccoli. They resemble each other greatly, especially when only the head, or flower, is seen; but an important difference is, that cauliflowers are tender, injured, and even destroyed, by slight frosts, while broccoli are hardy (more or less), and bear our ordinary winters, though not our severe ones; consequently, cauliflowers come to hand in summer and autumn, while broccoli furnish an early-winter, spring, and early-summer supply. Of cauliflowers, there are only two varieties (*if* there are two),—the Early and the Late; of broccoli, the varieties are numerous. The Walcheren Cauliflower, or Broccoli, which is large and excellent, but tender, is intermediate between the two. Gardeners take great pains to get forward cauliflower-plants through the winter, by sheltering with hand-lights, in frames, &c.: but it is hardly worth the trouble; disappointment often follows from deaths by frost, or, more provoking, by the cauliflowers in spring forming miniature heads, from the size of a shilling to a half-crown. Besides, broccoli perfectly supply the place of *very* early cauliflowers. For those who will speculate in such uncertainties, the best mode is to sow the seed the last

week in August, and not to transplant them till the middle, or near the end, of November, before the hard weather sets in. No sort of covering is necessary, nor any other protection than that afforded by a wall having a south aspect. In this way, young cauliflower-plants will stand ordinary winters, and will prove better and sounder for final planting-out in spring, than such as have had additional shelter. Seedlings, protected under glass frames, become tender, and suffer afterwards from exposure to the open air. Late-raised seedlings, which spend the winter in the open border, mostly prove the finest cauliflowers during summer, although they do not come in quite so early. Cauliflower-plants, there is no doubt, are often killed with too much care. Seedlings raised late in autumn seem to be very tenacious of life.

For main crops, make two successive sowings; the first at the end of February or beginning of March, in the warmest and most sheltered spot you have, in light rich soil. Quite at the foot of a south wall is a good place. Do not sow too thick. Plant the seedlings out as soon as they have made three or four leaves. Make the second sowing in the middle of May. Transplant at three or four intervals of ten days or a fortnight, in heavily-manured ground. These will give you crops which will come ready at times between September and November; after which, cauliflowers are no longer safe in the open ground, but are better hung up, root and all, in an airy shed. Liquid manure, diluted chamber-slops, soap-suds after a family washing, sewerage-water, and such-like gross fertilizers, may be used with advantage for watering cauliflowers during the early stages of their growth. Few vegetables are so liable to the attacks of snails and slugs, which must therefore be watched and destroyed. These vermin prefer weltered and flagging leaves to those that are quite fresh. A few leaves from cauliflowers that have been cut, laid close to the other plants, will attract the depredators, which may be picked off then, and killed early every morning.

Broccoli—Brassica cymosa.—The Brassica Pompeiana, aut Cypria, was a cauliflower or broccoli, according to Dodonæus, p. 552: "The third kind of white colewurtes is very strange, and is named Flowrie or Cypresse Colewurtes. It hath grayishe leaues at the beginning lyke to the White Colewurtes, and afterwarde in the middle of the same leaues, in the steede of ye thicke cabbaged, or lofed leaues, it putteth forth many smal white stemmes, grosse and gentle, with many short branches, growing for the most part al of one height, thicke set and fast throng togither. These little stemmes so growing togither, are named the flower of these Colewurtes." There are white, green, and purple broccoli; of the former, the varieties are numerous, and every year brings forth a new one. The leaves of broccoli are of a deeper green, and the heads of a less pure white, than those of cauliflowers. Good sorts are the White Cape, Knight's Protecting, Grange's Cauliflower, the Late Dwarf Tarton, Chappel's Cream, Early White Malta, Early Sulphur or Portsmouth, Wilcove's Late White, Miller's Dwarf, Dwarf Siberian or Danish, New Mammoth, &c. &c.

Sow these in May, for spring use. Autumnal broccoli are not wanted, if cauliflowers are grown. Make successive transplantations in July and August. The exact date of these must be often guided by the clearing of other crops (such as peas, beans, and lettuces) from the ground. In planting out, take care to give plenty of room. Four feet square is not too much space to allot to a fine broccoli-plant. At first, they may be planted out twice as thick as they are to stand in the row. By removing elsewhere every other plant at a later period, a check will be given to their growth, and they *may*, perhaps, come in considerably later than those that remain. A great difficulty is, to have a succession in spring; in spite of every pains taken, they often will show their faces almost all at once. Hence the expedience of growing a few plants of a good many sorts, instead of a large number all of one sort, and of transplanting and replanting at different periods of the summer.

Broccoli-plants stand average English winters, but unusually hard frosts will kill every plant in a garden. It is known that the transplantation of vegetables immediately before severe weather, renders them less liable to its attacks, as the flagging of the foliage, from the smaller amount of sap contained, leaves the frost less matter to work upon. It is therefore a good precautionary measure to take up part of the crop (even if they are replanted on the very same spot) in the middle of November, disturbing the roots as little as possible, and laying them in a slanting position, with their heads towards the north, only a few inches above the ground, and about eighteen inches or two feet asunder. An objection is, that the heads produced from them the succeeding spring are comparatively small. Broccoli come larger and finer on the spot where they are planted; but it sometimes comes to a choice between having inferior-sized broccoli, or none at all. Knight, however, states that, to obviate this, he tried the plan of trenching, or laying them in, in the month of September, and placing them so low as that the centre of the stem at the top of each plant was level with the surface of the ground. The plants were watered, roots were properly emitted, and the earth was drawn round each plant before snow was apprehended. The consequence of this treatment was, that the plants were fresh and vigorous in the spring, and produced large heads.

When the plants begin to show flower, it is a protection to them to break with the finger and thumb the mid-rib of four or five of the innermost large leaves, so that they droop inwards, and form a sort of sheltering umbrella over the growing bud. Broccoli may often be saved in this way from being completely spoiled by sharp spring frosts. A natural substitute for this easy operation constitutes the leading merit of Knight's Protecting Broccoli, a variety raised by the late illustrious president of the Horticultural Society. The inner leaves have a tendency to close together. "It is said to produce a bracteal leaf on one side of the flower, which rises up and

folds over it, thus protecting it from the sun or rain." The plan of turning in a few leaves should also be adopted with cauliflowers that show fruit; it screens them from hailstorms and scorching sunshine; it also indicates at a glance where a head is fit to cut, or likely to be so soon. Breaking in the leaves is better than tying them together at top, because tying prevents examination to ascertain their state of forwardness.

Early Purple Broccoli, Dwarf Late Purple Broccoli, Tall-headed Purple, and Green Broccoli, may be sown earlier than the White,—at the end of February,—because they come ready for use in autumn or early winter. They are a distinct, well-flavoured, and valuable group, which supply a most useful variety in the list of winter greens. When of first-rate quality, they are even more luscious and delicate than White Broccoli. Dr. Darwin, in his *Phytologia*, invokes on his friend "Poetic Tighe" the privilege "to dish *green* broccoli with savoury chine." Note, that purple broccoli boil green. To have them come to table a good colour, dash them into boiling soft water, in a saucepan without a lid.

Asparagus-broccoli is a large spreading sort, with a finer name than it has any right to, whose sprouting shoots are eaten in spring, but which takes up too much room, unless with families who have a good many rabbits or goats to feed, when it may be made to serve as food for man and beast at once. There is no fault to be found with the shoots themselves, except that you only get a good dish from a mass of vegetation that will dine a cow. They are in all respects better than cabbage-stump sprouts.

The Pé-tsai—Brassica Chinensis—and the *Pak-choï*, a strongly-marked variety of the former, are Chinese cabbages lately introduced to Europe, in high esteem in China, though but little has been done with them here, the great difficulty being their tendency to run up to seed. The former ought to attain great weights,—fourteen pounds and more; the latter is of remarkable appear-

ance and delicate flavour. They are merely mentioned here to bring them under the notice of experimental gardeners. The seed, doubtless, can be obtained from nurserymen who have correspondents at Paris, if not through persons who have interest at Kew or Chiswick.

VEGETABLES SUBJECTED TO GROUND-BLANCHING.

Asparagus—Asparagus officinalis.—A hardy, maritime, perennial plant, cultivated in gardens since the days of Cato, and always propagated by seed. It is a general idea, that there is only one variety of asparagus; Dr. Lindley expresses his belief that there are several, and the learned professor's opinion is no doubt correct. Without mentioning the Giant Asparagus grown at Great Yarmouth, the White Asparagus, from Rosendaël, near Dunkerque, has peculiar and permanent characters, besides the Common Green, the Large Purple, or Dutch, and the Ulm Asparagus, an early and deeply tinged variety. It would be an exceptional case, if a cultivated vegetable, raised from seed for so long a period, did not vary; it is remarkable that the variations have been so slight.

Asparagus likes a deep, rich, sandy soil. At most of the spots famous for asparagus, water is reached by digging to the depth of three or four feet. Irrigation, and even flooding, agree with it. The presence of brackish water and saline manures does not injure it, but the contrary. Asparagus-beds are usually formed by means of ready-raised seedlings. Young plants, one or two years old, may be bought of almost every nurseryman. As asparagus ought not to be cut till the third year after planting, this mode shortens the delay between the sowing of the seed and the first gathering a crop; but not so much as is commonly believed, in consequence of the injury the plants sustain by removal. If seed be sown on the spot where it is eventually to remain,

the bed will yield very nearly as soon as one composed of transplanted seedlings, and its after-progress will be more satisfactory.

The best time for *planting* is March and April, though it may be performed so late as May, or even at the beginning of June. It is of great importance to lift the roots very carefully, and to expose them to the air as short a time as possible. No plant feels a hurt in the root more keenly than asparagus; the fibres are very brittle, and if broken, do not readily shoot again. Instead of raising asparagus-beds, as usual, above the level of the earth, it is better to remove the earth from the intended beds, to the depth of two or three inches, laying it aside to be mixed subsequently with a large proportion of sea-sand and well-rotted manure. Trench and manure well the bed thus hollowed out, and plant the asparagus in rows nine inches apart and the same distance from plant to plant. Small drills are made, to the line, and the roots are carefully spread out, right and left, and covered with mould with the hand. The width of each bed ought not to exceed what is convenient for weeding and cutting. Careful weeding during the first summer is an absolute condition. The young plants are soon choked; and if the bed gets foul, it will not be easy to clean it afterwards. It is a bad plan to *steal*, as it is called, a small mixed crop of radishes, lettuces, and onions, from an asparagus-bed the first summer. The stolen vegetables commit equal injury with weeds, except the leaving noxious seeds and roots. Let *nothing* but asparagus grow on the bed. During the first winter, a *slight* top-dressing of the mixed earth, sand, and manure, may be returned to the bed; the second winter a heavier layer; the third, it may be brought to its former level, and, subsequently, it may be raised a little higher, if desired, in obedience to custom and prejudice. Salting asparagus-beds is a modern fashion; it serves to kill weeds and grubs, but as far as the plant itself goes, a good dose of liquid manure is more beneficial, and the risk is avoided of killing any

neighbouring plants whose roots may reach within the influence of the salt.

Asparagus-beds are often elaborately prepared by burying an enormous substratum of bones, horns, and other substantial manure; these do no harm, if they are not intended to save future trouble and encourage future laziness. But an asparagus-bed is best kept in heart by moderation in the cutting, and by the frequent application of fertilizers that are easily absorbed. Thus, as soon as the withered stems are cut, a thick coating of stable manure may be spread over the beds, to lie there all the winter. The rains will wash its essences to within the reach of the asparagus roots. In February, it may be raked off again, barrowed away, and be dug into the ground for other crops. But the asparagus-grower should never forget the benefit the plant derives from liquid manure.

To make a bed *by sowing*, prepare as before, sow the seeds (dried berries, if you can get them) in drills nine inches apart. The following spring, the plants should be thinned out to nine inches apart in the row, with great care not to injure those that remain. The surplus plants will serve either to make another bed, to plant out temporarily for forcing by-and-by, or to give away or exchange with a friend. Forced asparagus is not good for much; but the long green shoots, of the thickness of a swan's quill, are much sought after by French cooks, to chop into very short lengths, in imitation of green peas, and which they use to garnish and accompany steaks, cutlets, and made dishes.

The beds should be allowed to luxuriate, and run up to stalks untouched, for two years at least. The third year, a small cutting may be made. Afterwards, the bed ought to be fully established. Do not cut later than the middle of June at latest; if you go on longer, you may damage the bed; and, besides, the asparagus will have already lost its flavour. One motive for having green peas ready as early as possible, is that the asparagus-bed may be sooner forborne from. Use a

sharp knife for cutting. Slip it down the side of the stalk, close to the shoot, and then cut it firmly and boldly, so as not to wound the stool. Unless the flat side of the knife is thus pressed close against the side of each separate head of asparagus, you will probably destroy as many young shoots as you gather. The length to which asparagus is allowed to rise above ground before cutting must depend on taste; but the green part is that which is most edible. One-third of the length white, and two-thirds green, is a good proportion. A dish of white boiled Drumsticks may be pretty to look at; but if you can only eat half an inch, or less, of the tip of each, to cut such is a wasteful plan. The duration of an asparagus-bed entirely depends on the amount of common sense with which it is managed; it is easy to destroy it in a year or two, and it is not difficult to make it last a man's lifetime. *N.B.*—Never allow the green asparagus-branches to be cut during summer, to form a background to large bouquets intended to be put in chimney-grates or on entrance-hall tables, although they are so pretty, light, and feathery. The decoration will cost you, in the end, more than you think of at the time. Never dig or crop the alleys between asparagus-beds; merely keep them clear of weeds, which you may do if you like, by a sprinkling of salt. Never cut down the stems in autumn till they have turned quite sear and yellow. If the owner of the garden is blessed with abundance of room, and self-denial also, it is an admirable plan to have twice as many asparagus-beds as he wants, and to cut from each half on alternate years. Respected thus, and fairly manured and weeded, the beds will last for an indefinite period, and the asparagus will prove a first-rate sample.

Seakale—Crambe maritima.—This delicious vegetable, which furnishes a truly British dish, being as yet scarcely known on the Continent, is quite a modern upstart in the garden, according to the present mode of producing it. On many parts of the south coast, the inhabitants, from time immemorial, have been in the

habit of searching for it in spring, on spots where it grows spontaneously, and cutting off the young and tender leaves and stalks, as yet unexpanded and in a blanched state, close to the crown of the root. Evelyn, confounding it with "the broccoli from Naples, perhaps the *halmerida* of Pliny" [or Athenæus rather]—"*capitata marina et florida*," mentions that "our sea-keele, the ancient *crambe*, and growing on our coast, are very delicate." But its cultivation is a recent practice. Mr. Curtis, in his *Directions for Cultivating the Crambe maritima or Seakale* (1799), tells us, "Mr. William Jones, of Chelsea, saw bundles of it, in a cultivated state, exposed for sale in Chichester market, in the year 1753. I learn from different persons that attempts have been made at various times to introduce it to the London markets, *but ineffectually*. A few years since, I renewed the attempt myself; and though *it was not attended with all the success I could have wished*, I flatter myself it has been the means of making the plant so generally known, that in future the markets of the first city in the world will be duly supplied with this most desirable article." Mr. Curtis's efforts have proved successful; and, even in this little volume, it is fit to mention with honour the name of the person to whom we are indebted for the introduction of a new and valuable vegetable.

Seakale is nearly allied to the cabbage tribe, but belongs to a distinct genus, differing from them in bearing only a single seed in each pod. It is also perennial, and hardy in our climate. Rich people who like to make a display of forced vegetables upon their table, contrive to have a cutting ready by Christmas; but the persons for whose use this "Book for the Country" is intended, are advised to consider as an improvident extravagance the consumption of seakale so early in the season, while there is such an abundance and variety of other vegetables still remaining in the garden; one in particular (celery, if stewed) quite supplying its place. The time when seakale comes in most acceptably is during April and May, when we are tired of winter

greens (if there are any still left), and have forgotten the taste of cauliflowers. By growing it on the following plan, it may then be had at less expense and trouble, and of far finer quality, than that produced by any method of forcing; and no one who gives it a fair trial will afterwards relinquish it for main crops, although he may still choose to force a certain small quantity for earlier supplies.

Plants from one to two years old, or more, may be had of most nurserymen. The seakale-bed is to be planted either in November or March, in straight rows five feet asunder, the plants in each row to be eighteen inches apart. A light, rich, well-drained soil is preferable. It is of course understood that the ground be thoroughly trenched, manured, and cleaned in the way required to receive a permanent crop. Something, but not much, is gained by obtaining year-old plants from the nursery, instead of sowing the seeds in the rows, there to remain. Planting had better take place in autumn; sowing, in spring. By the first method, you have a larger cutting the ensuing spring; but you may also cut from your seedling plants, which will have suffered no check by removal, and will therefore grow with corresponding vigour. In sowing, drop the seeds, singly, three, four, or five times as thick as the plants are to be allowed to stand eventually. It will be a safe precaution against failure of the tender seedlings; and the superabundant plants, when removed, will prove useful for many purposes. Everything must be done, during the summer, to encourage the luxuriant growth of the plants.

Some time in December, not too soon, when the footstalks of the leaves have fairly separated themselves from the crown of the plants, heap over each about a quarter of a peck of sea-sand, or wood ashes, or those from turf; if not to be had, any light unmanured soil will do. Then earth up the plants from a trench dug along the space between the rows, deep, and not too near them, to avoid approaching the roots, exactly as if you were earthing up celery, only that no leaves appear above

the top of the ridge. The earth should be heaped up till it is eighteen inches or two feet above the crowns of the plants, and then regularly rounded at the top like a donkey's back, flatted down at the sides with the back of the spade, and the whole made very smooth and neat. The long trench between the rows of seakale will act as a drain during the dead time of winter. In the spring, when the shoots begin to push, large cracks will be seen in the bank of mould, and a trial may be made with a trowel, as soon as they are supposed to be sufficiently advanced for cutting, that is, from three to six inches long. Cut with a sharp knife just *below* the point where the shoot starts from, removing thereby a very small portion of the crown of the plant. The stool will receive no injury, seakale being one of those robust plants which are not easy to kill. Remember, too, that these blanched shoots are exceedingly brittle; much more so than those of seakale grown in any other way. Be careful, therefore, how you remove the earth from above and around them. The fall of a heavy clod, or an indiscreet roughness of manipulation, will often spoil your handsomest specimens. A flat basket should be at hand to receive the shoots; or better, a bucket half filled with spring water. The seakale thus obtained is larger, more succulent, and more delicately flavoured than that blanched under pots. In one case, the growing shoot is constantly in contact with the damp mould, and absorbs moisture instead of parting with it. In the other, the kale is subject to all the influences of air, though excluded from those of light, from which, however, it is only protected by a porous, imperfectly-closed vessel. All the expense of pots and manure for forcing is saved; and the only objection to the adoption of this plan in all cases is, that the crop comes in too much at once. But by having rows of kale in different exposures, a difference of at least ten days may be made; and a few plants at the foot of a south wall, earthed up from the border, and merely so covered with mould that it slopes against the wall, will afford a very early gathering.

No second cutting should be attempted; not so much for fear of weakening the plants, as because the weak shoots thus obtained are comparatively worthless. The earth should be levelled into the trenches, exposing the crowns of the plants; and by introducing some rank manure, there will be plenty of time for a crop of cauliflowers (in single line) before the increasing leaves of the seakale demand their removal.

A caution should be given to avoid a mode of culture highly approved by many who grow to sell, but do not themselves eat, seakale. Instead of protecting and blanching the shoots by a covering of sweet earth, they overwhelm their beds with barrowfuls of leaves collected in autumn (oak-leaves are most in vogue), and just shovel them on one side when the crop is fit for the knife. This plan has not a single advantage over the earthing system, except indulging the laziness of the cultivator; for any decrepit old woman could sprinkle a few apronfuls of leaves over her garden; but the other mode requires an able-bodied man to execute it properly. The plants beneath the leaves are not one day forwarder than those covered with earth, unless the leaves heat very much; and then the faulty characteristic of the method is fully evidenced. If the oak-leaves were collected in a perfectly dry state, and remained so during the whole winter, if no grass or weeds were ever intermingled with them, all might be well. For blanching seakale indoors, under cover, in pots or pits, a stratum of dry leaves does not answer badly. But autumnal leaves are mostly damp; there is some green rubbish amongst them; and consequently, a slight fermentation takes place, slight putrefaction follows, and the produce grown beneath, which delights the eye like a beautiful branch carved in ivory, disgusts the palate by a flavour as nauseous as it is undoubtedly unwholesome. I have seen seakale of this kind produced at table that was quite uneatable. No wonder we now and then meet with people who, having tasted it only once, do not like it.

This valuable esculent, so easy of culture, requiring no

peculiar advantages of soil, climate, or situation, well deserves to be more extensively propagated than it is. Those who form their judgment from the estimation in which it is now held in and about London, are little aware how far it is from being general in the remoter districts of Great Britain and Ireland. It is admirably adapted, by its hardiness, to such countries as Canada, Norway and Sweden, Northern Russia, &c., where, if earthed up before the frost came, it would lie dormant and safe under the thick snow, and be ready, on the return of spring, to put forth its delicate shoots. It is also fitted for those extreme northern and southern insular situations where the temperature never rises above a moderate degree, and where the rains of summer and the constant damps of winter would cause our more tender vegetables to rot. The introduction of a bed of seakale into a colony or island where it had hitherto been unknown, would be a worthy sequel to the first grand step taken in England by Curtis.

After the cutting is over, there is nothing to be done but to level the soil, and allow the plants to grow freely. Seakale may be propagated, and the beds renewed, if they have stood too long on the same ground, by dividing the roots of old stools, and planting them separately elsewhere: immediately after cutting is a good time to do so. Although seakale is a maritime plant, to which sea-sand and saline manures, such as sea-weeds, are agreeable in moderation, the application of crude crystallized salt in quantities does it more harm than good, for a time at least. To vary the time of cutting, a few stools, say from a dozen to eighteen, may be forced, by covering them with earthen seakale-pots, which may be had of most dealers in coarse earthenware. Large flower-pots, with the hole well stopped, would do; but the regular seakale-pots, which have a close-fitting lid at the top, are far more convenient, as they allow you to look from time to time, and watch the progress the shoots are making. Six or seven weeks before you want to cut, according to the severity of the weather, cover the plants, and the

pots over them, with fresh long stable manure, that is just ready to commence fermenting. You will thus have a solid hotbed, except the hollow spaces occupied by the pots. Use trial-sticks to ascertain the temperature. About 55° is a sufficient heat; and it is far better to begin early, and to force slowly rather than quickly. Too violent heat, even if it do not injure the plants, may wire-draw the shoots and spoil the sample. Seakale may also be blanched successfully, by being planted in pots, and placed in any dark warm place, such as a cellar at the back of an underground kitchen, or a quite dark closet behind the flue of a vinery. Plants so treated may be afterwards used for planting out permanently, without having suffered injury. And one great merit of this vegetable is, that whereas forced asparagus, rhubarb, &c., are but insipid watery productions at best, forced seakale presents the same good qualities as are offered by the produce of the natural season.

To cook seakale:—After washing it well to clear out any grit or sand that may have dropped between the tips of each shoot, tie it in small bundles of two or three shoots each, for the convenience of taking up, and drop it into a saucepan of boiling water, in which a little salt, according to taste, has been dissolved. Keep it boiling galloping. In twenty minutes, more or less, according to age and freshness, it will be done enough, which may be known by trying it with a fork. Sir Humphrey Davy tells us that the reason why vegetables and fish should be cooked by plunging them in boiling salt-and-water is, that this solution boils at a higher temperature than plain water, and that the sudden scalding fixes the albumen, mucilage, and other nutritive parts of the viand, instead of their being macerated and sodden, and so partly lost in lukewarm water. The flavour of seakale is a happy combination of the flavours of asparagus and cauliflower. If it is allowed to get a little too forward, or if light has been admitted to it before cutting, it is apt to contract a slight bitterness, which, however, is not disagreeable to every taste. For those who dislike it, it

may be considerably diminished, if not entirely remedied, by transferring the kale, when half-cooked, from one saucepan of boiling salt-and-water to another. The most economical way of serving seakale is, to lay it in a vegetable-dish with a strainer at the bottom, and to send up with it, in a small tureen, any sauce that may be desired at the same time. The usual mode is to pile it on sippets of toasted bread previously soaked in the kale-water, and to pour over it some white sauce, or melted butter made with milk instead of water. But if the toast is not intended to be eaten, but only to serve as a draining-cushion to the vegetable and then cast out to the pigs, in the country, or in a town probably to the kennel or the dust-hole, such a wasteful proceeding is, to say the least, culpable, while so many of our fellow-creatures are suffering for the want of a like morsel.

The Cardoon—Cynara cardunculus,—in England, is hardly worth the great space it occupies. Our temperature is so low, that it grows slowly, and is consequently tough; and our autumns are so damp, that when it ought to blanch, it rots instead. In the south of Europe it is cultivated on a large scale. The inner leaves and central bud of the plant, which form something like a coarse gigantic head of celery, are halved or quartered and boiled, stewed, or fried in oil. The flavour is that of artichokes. The flowers have the property of coagulating milk.

The most suitable soil for cardoons is a light rich loam inclining to be sandy. Either sow the seeds separately in pots in April, to be forwarded on a hotbed, or (the more usual plan), sow at the end of May two or three seeds in a hole or small hollow, at four feet distance in the row, and in rows six feet apart. When there are several rows, the plants should be ranged in quincunx order. Thin the seedlings to one in each hollow, leaving the strongest. Water and hoe frequently during their growth. In August and afterwards, when the plants are a yard or more high, tie up the leaves together, confining them with straw bands or osiers; then apply to

them a side-covering of long dry rye-straw, which must also be tied; and lastly, earth them up, as high up the straw as you conveniently can. In about three weeks, the cardoons will be blanched and fit for the kitchen; if they are left thus covered up much longer, they are almost sure to rot; and therefore it is best to blanch a few at a time successively, according to the demand for them. On the approach of frosty weather they must be taken up, with as much earth about their roots as may be, and set upright side by side in an airy cellar or reserve shed. If they are tied up a week or ten days before their removal, they will complete their blanching under cover. One of the best varieties is the Tours Cardoon, but it is inconveniently thorny; while the thornless Spanish Cardoon, besides being less succulent, is more apt to run up to seed. The Red Cardoon unites the merits of both. Cardoon seed is best procured from seedsmen who have frequent dealings with the Continent. A group of cardoon plants in flower make a striking object in the shrubbery. The surplus plants from the patches where they were sown may be advantageously so applied.

Celery—Apium graveolens.—The two leading varieties are the Manchester Red, or Solid Red, and the Solid White. The former is the hardier, the larger, and also the coarser of the two. Nurserymen have raised several subvarieties of considerable merit; but to have good celery, it is of more importance to cultivate skilfully than to lay out money in the purchase of this or that gardener's newest kind. Celery is a native of moist spots, by the sides of brooks and ditches, and delights in deep black mould. In the wild state it has exactly the same foliage and peculiar smell as it exhibits when cultivated, only it is smaller in stature. At times of the year when no celery is to be had, cooks make use of the bruised seeds to flavour soups and sauces. The substitute is somewhat expensive; the seed of wild celery would answer equally well.

To have early celery, you must sow in good time,—say at the end of February, in a pot or mignonnette-box, to

be placed in a hotbed or vinery, to start the seeds. Or they may be put in a warm corner of the kitchen, till germination has commenced. The seed is very small; the earth should be fine, and the seeds merely sprinkled over it, not covered with earth, and gently pressed down with the hand or the back of a trowel. Water from time to time, and as soon as the plants appear expose them to the light, and set them out in the sunshine, if only for an hour or two, every fine mild day, to prevent their being drawn up weak and thin.

At the end of March a sowing may be made in the open air, in the warmest and sunniest nook you have,—for instance, at the foot of a south-east wall. If you can spare a handlight or bell-glass, so much the better. Water regularly, unless the weather is wet. A sowing for main late crops may be made in April, always in a warm spot and on light rich soil, which may consist of one-half well-rotted manure, with advantage. From first to last, celery must be liberally supplied with manure and moisture. It is usual to prick out celery-plants into a very rich intermediate bed, before their final planting in trenches. The February-sown must have some protection, such as a canvas cover or mats, to be thrown over them at night by means of hoops; but a frame is the most convenient place wherein to prick out the earliest celery-plants. The second sowing will scarcely be ready to transplant before the worst of the season is over. Plants from the last sowing may be removed at once from the seed-bed to the trenches where they are to stand, if they can be so taken before their growth is too far advanced; if it is necessary to delay the operation, the plants must be pricked out as usual. Except for exhibition, or to comply with the requirements of a large gentleman's establishment, it is not much worth while to grow the very earliest celery. It has a greater tendency to "pipe," or run up to seed, which can only be checked by constant waterings, and not always then. The March sowing at the foot of the south wall, under the handlight, will furnish all that middle-class families require.

And, another thing, celery does not begin to grow in earnest spontaneously till the nights begin to lengthen, when July is past, and the dews fall heavier. You may then watch the improvement of your celery, and daily see it increase in luxuriance.

Sir Joseph Paxton, in his *Cottager's Calendar*, give the following clear directions for the treatment of celery plants in their intermediate state:—"Early in May th first plants will probably be sufficiently advanced to prick out in a warm sheltered situation, to strengthen. The best plan is to choose a perfectly hard surface, and upon this spread a layer of rotten dung, about three inches thick, beating it tolerably firm with the head of a rake. Upon this spread a thin coating of soil,—say half an inch thick,—and into this prick the plants three inches apart. The advantages of this method are, that the plants root better in dung than soil, and are much easier kept moist, which is essential to them: and by having a hard surface beneath, they are prevented from forming tap-roots, and rendered less likely to run to seed prematurely; and on removing them to plant in the trenches, they may be cut out with balls of matted fibres, and being then well watered, will scarcely flag at all. Shade them for a few days after they are pricked out, and guard them from slugs. As soon as the earliest plants have become pretty strong, in June, prepare a bed for them as follows:—Take out the earth from a deeply-dug piece of ground, where the soil is rich and light, about six inches deep and four feet wide, laying it in a ridge along the side of the opening; then add to the surface of the bed a layer of well-rotted dung, three inches thick. Turn this in carefully, bringing about two inches of soil to the top. Then plant in rows, crosswise, fifteen inches apart and six inches from plant to plant, reducing the tops slightly. By this method a great number of plants are raised upon a small piece of ground, and it answers equally well for single rows for early use. In earthing up, two pieces of board are used of the same length as the width of the bed, placing one

along each row, and filling between them, lifting the boards out carefully, and proceeding with the next row, always taking care not to add too much soil at a time. Do not allow the plants to want water at any time, nor earth too soon, as the object of earthing is merely to blanch for use, and a fortnight or three weeks will accomplish this. After the plants are earthed, they cease to grow fast."

For main crops of handsome celery, the surest mode, though not the most economical of space, is to plant in single rows, in trenches, some time in July, the sooner after a shower the better. Remember that, to have good celery, you must give it room. Show celery is mostly produced in separate holes, where single plants are set and fed continually with manure and water. These really cost more attention and space than they are worth; but for fine celery, without aiming at anything extraordinary, open a trench about a foot or fifteen inches wide and three inches deep; lay all the earth taken out on *one* side of the trench; on the north side, if the rows run from east to west; on the east side, if from north to south. Break up the bottom of the trench with a fork; throw in well-rotted manure, and over that a slight stratum of mould. In this compost plant the celery-plants, by line, exactly in the middle of the trench, in a single row, at least six inches from plant to plant. Water daily till the plants are well established and begin growing. If the trenches are made much deeper, the celery is apt to be stunted in its growth; and if the earth crumbles and caves in upon them too soon, they suffer a check from which they never recover. That is why so shallow a depth as three inches is advised. The plants can always be earthed up sufficiently, provided the interval from trench to trench is sufficient: four feet is a good distance; five feet, better. The ground may be economized by pricking out cabbage-plants on the top of the thrown-out earth, and in the spaces between the trenches, to be removed at earthing-up time. When the celery has attained its full size, and

not before, the process of earthing up may take place. It grows very little when once it is earthed. A small portion only, therefore, should be earthed for early use, about three weeks before wanted: the main winter crop may remain as it is till the beginning of November, when frosty nights are apprehended.

Instead of gradually earthing up and filling the trench from time to time (by which, if the plants are drawn up a little longer, they are also prevented from getting stouter), the operation is better performed once for all. It takes two persons to earth up celery properly. Choose a fine dry day, after the dews have disappeared, and let one person go on the side of the trench where the thrown-out earth does *not* lie; the other, with a spade, on the side where it does. Then let the assistant grasp with both hands each separate head of celery, holding the leaves close together, to prevent the mould from entering its heart, while the gardener carefully shovels in the earth around it. Proceed along the trench thus till it is filled up to the level of the ground. It may be necessary to go over the ground twice to do this neatly; but a little extra trouble will be well bestowed. The spreading leaf-stalks *might* be tied together; but so, they would incur greater risk of rotting. Earth is now to be heaped up against the celery-plants, from the space between the trenches, till only the foliage of the leaves is uncovered. Two men working together on opposite sides will be able to do it better than if they were alone. The pressure against the plants will be equal, and equally applied; and one of them can still hold the celery-head together, if required. The higher the celery can be earthed, the better it will be protected from frost; and the more mature are the outer leaves, the less liable they will be to decay. The ridges of earth should be beaten smooth on each side with the back of the spade.

Some gardeners make their trenches a little wider, and so contrive to plant two rows of celery six or seven inches apart, instead of a single row, in each trench. The plan answers where quantity of produce is of much

greater importance than quality, or for families who consume an unusually large quantity of small and late celery in soups and stews; but the difficulty of earthing up properly is much increased, and double rows of celery in a single trench are almost always of inferior merit. Some kitchens require a protracted supply of little celery, even if each head be not thicker than the little finger. Such celery is pretty to look at, and not bad to eat in a spring salad. It may be had abundantly, by planting in wide trenches not more than two inches deep, during the last fortnight of September or the first of October, and earthing them up, according to the method quoted from Sir Joseph Paxton.

If the gardener is satisfied with the kind of celery he has, and does not think that he can change for the better, he will be wise to set out in spring a few plants to produce seed. Support the flowering stems with stakes; gather from time to time as the seed ripens. It will preserve its vitality for several years; and, moreover, a pinch will be acceptable to the cook to flavour broth, when celery itself is over. Amongst the middle classes in England, celery is mostly eaten raw. All stomachs cannot digest it in that state. Boiled in salt and water, and served either with white sauce or brown gravy, it forms an excellent dish of hot vegetable, and a favourite accompaniment to roast turkey or poultry in general.

Celeriac, or *Turnip-rooted Celery;* in French, *Céleri-rave*, is sown and transplanted like common celery. It is sometimes not earthed up at all; but it is the better for being so treated for a short time in a slight degree. The root forms a rough irregular knob, of the size of an ordinary garden turnip. It is not much known in England, and not generally grown in France, but is increasing in favour there. It requires even more watering than celery. In Germany, where it is largely consumed, the beds of celeriac are surrounded with a raised rim of earth to retain all the waterings given them, so that the plants during the whole period of their growth stand in a constant foot-bath. Celeriac is easier and less expensive

of culture than celery, since it requires no trenches, but may be finally planted in open beds in June, after having been previously pricked out, exactly as directed for celery. It has the advantage of keeping well in a cellar, and may be used in the kitchen for seven or eight months in the year. Epicures praise the delicacy of its flavour.

LEGUMINOUS VEGETABLES.

The Pea—Pisum sativum.—Green peas, as we call them, "little peas" according to the French, are of many varieties, which may be classed under three general heads: 1st, very early peas, of moderate height, but moderate bearers, and of second-rate flavour; 2ndly, summer peas, main crops, of various heights, good bearers, of full flavour; and 3rdly, autumnal peas, very tall, from six to eight feet or more, abundant bearers of large peas, of sweet, luscious flavour, mostly square and wrinkled when dry. The two former may be made autumnal by management, but the third cannot be early, and is always best for late crops. Nurserymen have raised many varieties of each, and of course naturally endeavour to introduce their own special *protégés*. Those mentioned on the following lists as examples, are not intended to exclude the culture of others that are necessarily omitted for want of space.

Very Early Peas.—Early Frame single-blossomed. Early Frame double-blossomed. [Note that the term double-blossomed is a misnomer. It should be one-blossomed and two-blossomed, denoting that the kind produces either one or two blossoms on each footstalk. True double blossoms, *flores pleni*, are mostly barren.] Early Warwick, said to be ten days earlier than the Early Frame; Early Conqueror; Prince Albert, early, fashionable; Sangster's, No. 1; Early Paradise; Bivort de Belgique; Nain hâtif de Hollande; Michaux de Hollande; Early Emperor; Flanagan's Early; Early Charlton, or Nimble Tailor; Bishop's Early Dwarf; Early Eclipse, &c., &c.

Summer Peas—First Crops.—Auvergne; Blue Scimitar; Dwarf Blue Prussian; Thurston's Reliance; Fairbeard's Champion of England; Woodford's Green Marrow, &c., &c. *Second Crops.*—Milford Marrow; Knight's Dwarf Green Marrowfat; Hairs's Mammoth Marrow, &c., &c. [Whatever bears the name of Knight is almost sure to be good.]

Autumnal Peas.—Knight's Tall Marrow; Green's Tall late Marrow; Victoria Tall Marrow; Oxford Tom. The differences of these sorts are not great. All are good, the last especially. The peas are so sweet, that it is not easy to keep them from the birds.

Besides the above, there are a few peculiar sorts which merit notice; such as the Dwarfs, which do not require sticks. Some of these are very pretty, having the effect of a row of snowdrops when out in full bloom, and they are not to be despised as bearers. Bishop's Dwarf, Groom's Dwarf, Queen of Dwarfs, and Valparaiso, or American Dwarf, grow no higher than from a foot to fifteen inches. *The Sugar Pea—Pois sans parchemin*, or *Zuckererbse*—has a succulent peascod, which is cooked entire, like French beans.

The English mode of sowing peas is in drills, an inch or an inch and a half deep. Two parallel drills may be sown a foot apart, and then a wide interval must follow before the next two drills. The Flemish market-gardeners, amongst the most skilful in the world, make the intervening space from five to six feet, and down the middle of it they plant early potatoes. They stick the peas very early in spring; and it is found that the shelter of the sticks greatly aids both the peas and the potatoes. The French usually sow peas in beds a yard wide, with a foot or eighteen inches alley between each bed, which contains four rows of peas dibbled in, in tufts six inches apart in the row, each dibble-hole containing five or six seed-peas. After the beds are well hoed in spring, the sticks are stuck in bower-wise, so that each bed forms a sort of thicket of peas. The fruit is gathered by cutting the stalks with scissors, instead of pulling off

the pods by finger and thumb, as we do: by our mode the plants are often seriously injured.

For early peas, both of the first and second sorts, sow in November. With these crops a certain amount of risk must always be run. If the ground is covered with snow before they are up, they will make their appearance as soon as the thaw comes, and thrive admirably. If a mild winter is followed by a sharp spring, you may lose the greater part of them. Protection by mats, straw, or thick bushes, in general does more harm than good, by causing them to spindle up weakly. Mice are great destroyers of winter-sown peas. Successive sowings may be made in December, January, and February, weather permitting. Main crops of the second and third sorts will be sown in March. The earliest sowings should be sown the thickest; but with peas in general it is false economy to be too sparing of seed. Crowding is avoided by drawing a broad drill, the whole breadth of the hoe, and scattering the seed over that breadth, instead of letting it lie close-packed in a single line at the bottom of a narrow drill. When the plants are three inches high, or before, draw a little earth towards them, give the soil nearest them a good hoeing, inspect the rows of peas carefully, to see that no weeds are left, and stick as soon as you conveniently can. Early sticking is of great importance. Plant the sticks on each side of the row of peas, inclining them a little on one side each way, so that they cross each other as seen in a direction across the row. It is worth while fastening them together by means of horizontal sticks tied along their top. This will often save the full-grown row from being capsised by south-west storms. Throughout April and May you may sow the Scimitar, the Prussian Blue, and Marrowfats for succession. In June, the pea-sowing season will be drawing to a close. Between Midsummer and the first of July, some of the very early or fast kinds may be sown as a speculation. If the weather is dry, water the drills well before sowing, and steep the seed from six to twelve hours in milk-warm water. Watering

and manuring the drills for late-sown peas saves them from the attacks of mildew. The Marrowfats will sometimes yield crops so late as the beginning of October, or later. It is better to buy seed-peas than to save them yourself; the few that remain after gathering are not worth the time the haulm must stand on the ground to ripen them; and few heads of families will allow a full-bearing crop of peas to hang on for seed only, as the seed-growers do. Early peas may be made still earlier, though a sacrifice is made in the quantity of the produce, by pinching off the tops of the plants as soon as the first few pods are formed. A clever Parisian gardener, the late M. Tamponet, had observed that transplanted peas showed blossom earlier than those sown where they were to remain. He consequently used to sow in the beginning of January, under bell-glasses or an awning, to plant out in February in sheltered spots, and sometimes even in the open garden. He used to employ this method even with his second early crop. Peas like a mellow loam, and to be sown on ground not previously occupied by leguminous plants.

The Garden Bean—Faba major.—Beans thrive in stiffer and more clayey soils than peas, and are altogether hardier plants. They require no support of sticks; on the contrary, they are sometimes themselves made to support peas, which cling to them by means of their tendrils. Good varieties of the bean, in which there is little attempt at novelty on the part of gardeners, are the Early Mazagan, the Early Longpod, the Green Longpod, the Windsor Bean, the Toker Bean, and Johnson's Wonderful, which is certainly a most abundant bearer. The Dwarf Fan Bean is very distinct from the above, and is a pretty object in the kitchen garden. It may be planted more closely than any of the others, and its small beans are excellent for table, especially if gathered before quite full grown.

Garden beans should all be sown early; that is, in the autumn, in November or December, to stand the winter. Few people care to have a long succession of this vege-

table; and therefore the first come are the most sought after, besides being the most delicate in flavour. Late beans are apt to be coarse, strong, and bitter; they are also extremely liable to the attacks of aphides, or plant-lice. It is consequently needless to give directions for their production, either by late sowings, or by breaking down the half-grown stem, as some have advised. Two sowings, one in November, the second in February, or as soon after as the weather permits, will afford a sufficient succession for most families.

Set beans in rows, with the line and dibble, three inches apart in the row, and an inch and a half deep. Drop no more than a single bean into each dibble-hole. Two parallel rows of beans may stand side by side, nine inches apart; and then there ought to be an interval of three or four feet at least, cropped with low-growing plants, such as lettuces or onions, before the two next rows are set, in order to admit light and air. When the beans are up, let them have continued hoeings in fine dry weather. Dwarf Fan Beans may be planted in beds four feet wide, in rows nine inches apart, and six inches from bean to bean in the row, with a foot-wide alley between each bed. Hoe them well in the early stages of their growth, as they will afterwards spread and pretty well cover the ground from sight.

When the beans are well in flower and show as many blossoms as will form a sufficient crop, the produce may be hastened by "topping" them. This is done by going carefully along each row, and stopping every leading shoot by breaking out the central bud by a sideways twist of the finger and thumb. It only requires a little patience. The row should be gone over a week afterwards, to see that none of the stems have been passed over. Little or no amount of produce is lost by this means; as, if the beans were suffered to mount unchecked, many of the lower pods would prove abortive, which they do not when the tops are stopped. Fan beans are not subjected to this treatment.

For early beans, Paxton recommends to sow thick in

a small bed, in light rich earth, in a sheltered situation, some time in November, covering them with about two inches of mould, and protecting them as they rise with fern or litter in severe weather. These are intended to be transplanted in March. The transplantation may increase their precocity, as we have seen it stated in the case of peas. His sorts are the Early Lisbon, and the Hangdown, a synonyme of the Long-pod. If late summer beans *must* be had, soak the seed for twelve hours before setting it in May or June. The sweet smell of bean-blossoms and their attractiveness to bees, are some excuse for their continuance in the garden, even after the demand for their fruit has ceased.

The French Bean, Kidney Bean, or *Haricot—Phaseolus vulgaris.*—French beans may be divided into two classes; the Runners, which mount high, require tall sticks, and come in late, and the Dwarfs, which require no sticks, and afford a comparatively early but much less abundant crop. Good dwarf sorts are the Robin's Egg (one of the best), the Red-speckled Dwarf, the Black-speckled Dwarf, the Negro, the Cream-coloured Dwarf, the Dun Dwarf, Fulmer's Early, Wilmot's New Early Forcing, the Mohawk Six Weeks, or Chinese Speckled Dwarf, the Early Prince Albert, the Newington Wonder, the Canterbury White, &c., &c. The varieties of the Runners are much less numerous. There is the Case-knife, an excellent sort, producing long tender pods in abundance, which contain, when ripe, flat white seeds. It is not easy to distinguish this from the famous Haricot de Soissons of the French. There are Runners that produce small white round seeds, as well as Buff Runner Beans. Both are good, but still inferior to the Soissons, or Case-knife.

It should be remembered that French beans are tender annuals from India, and that the least touch of frost kills them. Nothing therefore is gained by too early setting; the middle of May is quite time enough to put the seeds into the ground; and even this sowing will often perish or come to nothing. Afterwards, successions may be

sown every fortnight, if there is a great demand for them, to the end of June, or a little later, as a speculation. Kidney beans may be forwarded by sowing them thickly in pots, in a hotbed or vinery, to be transplanted into the open ground when they have made the first two leaves after the seed-leaves. But they often suffer severely from the change from the damp atmosphere of a frame to the keen dry air of May and June. Runners bear the transition better than Dwarfs. The latter, when so treated, are best planted in a single row, close to the foot of a south wall. Covering them with bell-glasses till a shower falls, is the best mode of insuring success.

French beans like a warm light soil, which has not been manured for some time previous. Plant Dwarfs not too deep, by dibble and line, in narrow beds, which will just hold three rows. Nine inches apart each way, from plant to plant, will allow of arrangement in quincunx order. If the seeds are dropped too deep, and cold wet weather follows, they will rot instead of coming up. Hoe between them carefully from time to time, to loosen the earth and destroy every weed.

Runner Beans should be sticked at the time the seeds are planted. Space they must have from row to row. If crowded, the produce will be almost nothing, and that nothing will be difficult to get at. The sticking of Runner Beans admits of many tasty and ingenious devices, such as bowers, covered walks, arches, crosses, &c. &c. The two great points are to admit sunshine and air, and to stand firm against the buffetings of tempests. Dwarf Beans planted in single rows, or in two parallel rows a foot apart, may stand considerably thicker in the row than when grown in beds. In both Dwarfs and Runners the green pods must be gathered as soon as fit, whether they are wanted or not: for if they are allowed to hang and form their seeds, it will check the production of a succession of young Kidney Beans. The strength of the plant will be directed to the ripening grain. For sowing during summer droughts, water the drills, and steep the seed twelve hours in water.

The consumption of Kidney Beans is much more considerable on the Continent than in Great Britain. Whole fields are planted with them. Not only are the immature pods eaten boiled, as with us, but the entire pod, with the seeds nearly ripe, stewed in butter, makes a nourishing article of diet: and the ripe seeds, or haricots proper, are largely cultivated for winter use. The forcing of Dwarf Kidney Beans, to supply the tables of the wealthy, forms a course of instructive practice for young gardeners, since it leads them to study the principles and theory of horticulture.

The Scarlet Runner—Phaseolus coccineus.—This bean has two varieties:—the White Runner, with entirely white blossoms, and the Painted Lady, with scarlet and white blossoms. The last of these is very pretty, but in respect to their produce, there is little or nothing to choose between them. The main crop of Scarlet Runners may be sown in the middle of May, though they may be forwarded by growing them in-doors, in small pots, two in each, and turning them out with the balls entire, during the first week in June. They will be the better for a little out-door protection for a day or two. Their sticks must not be less than six feet high. Scarlet Runners bear an abundance of pods, which constitute a wholesome and agreeable vegetable, if not suffered to hang too long; they then become coarse, tough, and stringy, and the membrane which lines the seed-vessel renders them almost uneatable. Scarlet Runners are favourites with the cottager, both for their productiveness and for the decoration they bestow on his porch or his paling, and for the convenient screen their rapid growth affords to his pigstye or washhouse, in the corner of his garden.

The Scarlet Runner differs from the Kidney Bean in not being an annual plant. If the roots are taken up, preserved from the frost, either in a cellar, or by being buried in sand, and replanted at the end of the following May, they will produce stems that are equally vigorous and flower earlier than those which spring from seed. Like other tall runners, they must be planted at considerable distances.

Mr. Cuthill's statement is noteworthy:—"In November of the year 1830, I saved a number of roots of Scarlet Runners, and stored them in moderately damp mould, away from frost. These same roots were planted out in single rows, one foot asunder, some time in March or early in April, the crowns being half an inch below the surface. Beans (Scarlet Runners) were sown in rows at the same time. The transplanted roots came into bearing just one month before the sown seed. This afforded me a lesson which I did not forget; I have had several roots three years old, but one in particular I grew for seven years, and this one I exhibited at the May show at Chiswick in 1834. Many were surprised to see a Scarlet Runner ten feet high, full of flowers and beans, the produce of a plant forced in a vinery. From this little experiment I would infer, that if cottagers would save their roots in autumn and put them carefully by, they would have this valuable vegetable a month earlier on their tables than they now do. Another way of saving the roots is to leave them in the ground all winter: but this plan is not to be recommended; the plants will have exhausted the ground very much during the summer; therefore they should be replanted in fresh ground. I should mention here that if fine roots are wished for in autumn, care should be taken not to allow many seed-pods to ripen, as the ripening process robs the plants of much of the returning and elaborated sap. Care must be taken that these roots are not eaten. They are poisonous."

SPINACEOUS VEGETABLES.

Spinach—Spinacia oleracea.—This class of esculents holds only a nominal place in such English gardens as do not supply tables that are aristocratic in point either of wealth or rank. On the Continent they constitute a very important item of kitchen requirement. It is no exaggeration to say that, in proportion to their respective populations, there is a thousand times as much sorrel used

in France as there is in England. The increasing friendship which is happily growing up between the two nations, and the more intimate intercourse in which it may result, will probably have the effect of increasing the estimation in which spinaceous plants are held.

Spinach is an annual, whose tendency to run to seed in dry weather makes it the plague of the gardener who is compelled to furnish a summer succession. He can only do this by sowing once a fortnight, or oftener, and not always then. The best spinach is the autumn-sown, which stands the winter, and is consumed in spring. The varieties are,—the Round-leaved, Smooth-seeded, the Oblong Triangular-leaved—which has prickly seeds—and the Flanders, or Large-leaved, with smooth seeds. This last is by far the best, and may be made to supersede the others for general, and especially for winter, culture. Spinach does best with abundance of manure: and as it occupies the ground only for a brief period, it is a convenient precursor for summer crops, such as kidney beans. Sow quite at the end of August, or beginning of September, in four-foot beds, in rows from nine inches to a foot apart. The drills must be shallow; a simple raking will cover the seed, which may be sown thicker in the drills than it will have to stand eventually. Flanders Spinach becomes serviceable when not more than one-third grown, and the plants may be thinned by cutting their tap-root with a sharp knife, taking great care not to disturb those which remain. Successive sowings may be made in October, January or February, March, and April. From May till August again, spinach-sowing is a lottery, in which you are more likely to gain blanks than prizes. Constant waterings must be administered the instant a course of dry weather sets in. It is best to purchase spinach-seed; if you save it yourself, remember that the plant is diœcious, that is, the male and female flowers grow on separate plants, and that it is necessary to let both stand, in order to have fertile seed.

Many persons believe spinach so wholesome a vege-

table, that they regard it as actually medicinal. A relish for it is an acquired taste, which increases by repeated indulgence. A mixture of sorrel corrects the peculiar flatness of its flavour: and in cooking, a larger proportion of salt may be added than to most other vegetables. Spinach-juice furnishes an innocuous colouring-matter, when it is wanted to give a green tinge to creams, jellies, and ornamental confectionary.

Sorrel—Rumex acetosa.—It will hardly be credited in England, that sorrel is one of the staffs of life to the French peasantry, without an abundance of which throughout the year, they would consider themselves reduced to wretched misery. For the winter supply, the leaves are boiled down and salted during spring and summer. The Round-leaved sorrel, with trailing stems from a foot to a foot and a half high, is not the kind to cultivate, except for variety. The best, most productive, and delicate, is the Broad-leaved sorrel, of which a marked subvariety, the Golden Sorrel, is almost exclusively cultivated in the environs of Dunkirk. Those who wish to be choice in their kinds will do well to procure seed from some large town of either French or Belgian Flanders. Sorrel may be propagated either by seed or by division of the root, which latter, like that of rhubarb, it takes a great deal of hard usage to kill. Plant or sow in drills nine inches apart in beds four feet wide. The seed is very small, and must only be slightly covered with earth. The plants may be thinned to from three to six inches; but if they are left crowded, no great harm will be done. Sorrel should not occupy the same ground too long, unless it is well manured and hoed. When transplanted, the spare roots will be useful to give to a neighbour. Spring-sown sorrel may be cut the following autumn. Afterwards it will afford several cuttings during the summer. It is used like spinach, and for sauces, in salads, chopped small with fine herbs, but principally for sorrel-soup, which is an excellent anti scorbutic regimen.

Orache, or *Mountain Spinach—Atriplex hortensis.*—

Of this handsome plant there are two principal varieties; the first, and by far the best, the Green Orache, with broad, irregularly-oblong leaves, thick, pale-green, and glaucous, with a slightly acid flavour; and the Purple-leaved, whose colour is against it for the purposes of spinach. The leaves may be plucked off during summer, to supply the place of spinach which has run to seed; in France and Belgium, it is principally used, when quite young, with not more than three or four leaves, to put into their popular vegetable soups, under the name of Bonne Dame, or Good Lady, sometimes Belle Dame, or Pretty Lady, and possessing certain virtuous qualities which are not very accurately defined. If Orache be allowed to run to seed in a garden, it will spring up of itself for several years afterwards. Sow in drills a yard apart, and thin out the plants to a foot in each row. This is the best plan for summer use. But young Orache plants in April and May will prove very acceptable when other greens run short. Therefore, follow Miller's wise advice, to sow *at Michaelmas*. In that case, the drills may be a foot apart, and the plants will require scarcely any thinning till they make their grand start in the course of May. Orache is useful to mix with sorrel for those who do not like the extreme acidity of the latter plant.

Wild Spinach, or *Good King Henry—Chenopodium Bonus Henricus.*—A neglected native perennial plant, long used as an esculent by the humbler classes of this country, and which merits renewed attention and experiment on the part both of the gardener and the cook. The plant manifests its hankering after the pleasures of domesticity by growing naturally in places which receive the outcast rubbish of human dwellings. If as much pains were bestowed on it as have been on rhubarb, perhaps the result might be something really good. The young shoots are eaten in spring as a sort of rustic asparagus, but the best mode of developing their good qualities, yet remains to be tried and published. Such men as Curtis, Myatt, and Cuthill, ought to have

imitators. The first-mentioned horticulturist says that, in his time, Good King Henry was cultivated in Lincolnshire in preference to garden spinach. It is easily propagated by dividing the roots in autumn, to be planted a foot or fifteen inches apart; and a bed will last for several years.

White Beet—Beta cicla.—This plant is much grown in France, under the name of Poirée, but more for ornament than use. It is occasionally seen in English gardens, as a curiosity. There are three varieties, distinguished by having white, yellow, and scarlet footstalks and veins on the leaves, which are of a bright glossy green. They would render good service as garnishing for large dishes, or to receive slices of cold meat, pats of butter, lobsters, pickled salmon, &c., &c. Sow in spring, not too soon. The seed had better be procured from Paris. The leaves in spring furnish an abundance of beet-spinach. The root is too coarse for table use.

Patience, Herb Patience, or *Patience-dock—Rumex patientia.*—Easy of culture, like other docks. Long known for the medicinal virtues of its root, whence it obtains its French name of Monk's Rhubarb, but also useful for its precocity as a spring spinach. In many parts of France its leaves are so employed; in Dauphiny it is called Everlasting Spinach; and in old times was generally cultivated in England, as it still is in Sweden. Its flavour is milder than that of the other esculent Rumices or Sorrels; but its great merit is, that it is fit to cut eight or ten days before they are. On the other hand, the vigour of its growth and the space it occupies, make it an unwieldy plant for small gardens. Patience is only too easily propagated by seed, as well as by division of the root, and is not nice as to the soil it grows in.

New Zealand Spinach—Tetragonia expansa.—A plant of historic interest, having been discovered and given to his sailors as an antiscorbutic by Captain Cook, and introduced to this country by Sir Joseph Banks. It has had a great run as a substitute for spinach during the

summer months. It has succulent leaves and shoots, which creep over the ground, covering it for several feet around the root. By watering during hot weather, an inexhaustible supply may be had; but the dish will not suit every palate, though the sailors were glad to get it, boiled, every day at breakfast and dinner. It is most useful for garnishing; being one of the Ficoïdeæ, it does not easily flag and droop. Sow in pots in a hotbed in March, and plant out a yard apart every way, in June. The flowers are green and inconspicuous. At the end of ordinary summers there is a sufficiency of seed for reproduction.

ESCULENT FLOWERS.

The Artichoke—Cynara Scolymus.—Several species of flowers have made their way into the Briton's bill of fare. Cowslips and cream are a country delicacy. The flower-buds of nasturtiums make an excellent pickle. The buds of the *Caltha palustris*, or Marsh Marigold, serve also as an inferior substitute for capers (themselves flower-buds), of which there is an enormous importation. But the caper bush, though it grows so luxuriantly wild, in the south of France and Italy, submits to cultivation with a very bad grace, partly in consequence of the whim it has of growing from a perpendicular, not a horizontal, surface, such as a chink in a ruined wall or a cleft in the face of a rock. Full-blown nasturtium and borage flowers enter into the composition of salads, to which, therefore, they must be referred, together with the above-named buds for pickling. Artichoke-heads are the only flowers comprised in the list of cooked vegetables; though they, too, might be referred to salads according to Continental practice. The bottom, or receptacle, is cut into thin slices, to each of which a flower-scale remains attached to serve as a handle; it is seasoned with pepper, oil, and vinegar, and so eaten raw in immense quantities, *à la poivrade*, as it is called.

Scarcely more than two sorts of artichoke are known

in England; the Globe, the best and largest, and the Conical, or French, which, however, is most in esteem in Paris. The Provence Artichoke, and the Red and Purple Artichokes, are too tender to get through any but our mildest winters.

An artichoke-plantation ought not to occupy the same ground more than four years; in its third year, therefore, a new bed should be made to replace the old one. So luxuriant and deep-rooted a plant as the artichoke requires a deep, rich, mellow soil. As seedlings are apt to vary considerably from their parent, the plant is commonly propagated by offsets. About the middle or end of April, when the leaves on the old stools are from eight inches to a foot in length, clear the earth away from them, so as to uncover the offsets and the part of the root from which they spring. There are generally from six to twelve offsets on each stool. Two or three of the finest are left standing to bear the crop of the season. Separate all the others as near the root as possible by pressure with the thumb, by a blunt knife, or a wooden chisel, bringing away a portion of the stump attached to each. Shorten the leaves, trim the root, and plant the offsets in deep-dug well-manured land. They may remain out of the ground a little while to dry the wound of the root, but the leaves must not flag too much. Artichokes should be planted in quincunx order, a yard apart every way. Two offsets, five or six inches apart, may be planted together to form one stool. A watering should be immediately given, to settle the earth about them; which must be repeated every other day, as long as dry weather lasts, till the plants have taken firm hold of the ground. Hoe continually as fast as weeds appear and the surface of the bed gets hard. The majority of plants so treated will bear fruit the same autumn. When the heads are all gathered, cut down the flower-stems as close to the roots as possible.

It is hard to decide which is the most advisable plan of treating artichokes during winter. Perhaps the best way is to do nothing at all, but to leave them to them-

selves. In severe winters, like that of 1854–5, every plant in the garden will perish, however you protect them. A whole neighbourhood may not have a single artichoke-stool left. A partial remedy against this accident is to take up, a little before Christmas, a certain number of stools, and to set them, not too thickly crowded, in the corner of some cellar or shed, where the frost does not enter. It has been found that plants so preserved, when replanted in spring, showed fruit earlier than in ordinary cases. The plan is worth adopting partially, if only as a prudential measure. The seed affords another means of supplying the place of plants which the winter has killed. Sow in gentle heat, under a frame, in February or March, to plant out when genial weather arrives; or the seeds may be sown where they are to remain, exactly as directed for cardoons. Some gardeners take up the seedlings to cut their tap-root, and replant them immediately on the same spot, in the belief that the operation causes the production of better and earlier fruit. Amongst the seedlings so obtained, some will have to be rejected. They will be thorny, and with fruit not much better than overgrown thistle-heads, while others will turn out excellent.

Wintering may be done by cutting down the leaves within a foot of the ground, and earthing up the plants without covering their heart. When frost actually arrives, dry leaves or litter may be thrown over each stool, to be removed on the return of mild weather, to avoid rotting. If the frost returns, the covering must be replaced. An objection is, that the cutting of the rank foliage overcharges the stool with sap, and thereby makes it more susceptible of frost; and that the earthing up, while it shelters the crowns, exposes the roots.

At the beginning of April, when severe frost is no longer to be feared, manure and dig over the artichoke-bed, and remove the superabundant offsets, leaving only two or three of the strongest on each stool. This disbudding process is too often neglected in English gardens. The roots are exhausted by innumerable shoots, which

produce leaves only, instead of flowers. Sea-weed manure agrees with artichokes.

ESCULENT FUNGI.

Mushrooms—Agaricus campestris, or *edulis*.—Although various cryptogamic or invisibly-flowering plants are employed as articles of human food, the mushroom is the only one belonging to the class which has as yet been subjected to culture. Amongst the fungi, the species most commonly eaten are the mushroom, the morel, *Phallus esculentus*, and the truffle, *Tuber cibarium*. The two latter are sought for wild by persons who make a trade of the employment, and are always sold at high prices. In some countries of Europe, the list of edible fungi is greatly extended. Thus, in Italy, the orange mushroom, *A. aurantiacus*, is brought to market in large quantities; while the French, on the contrary, have in general such a horror of the dangerous species, that they will eat none but cultivated mushrooms. Their cultivation, consequently, is practised on an extensive scale in localities which possess the requisite conveniences; worn-out quarries, catacombs, and subterranean vaults and passages, being employed for the purpose. The prejudice is so strong, that abundant crops of excellent wild mushrooms are suffered to rot neglected on the spots where they have sprung up. There are, therefore, mushroom-growers,—for instance Monsieur Puy, of Lezennes, near Lille,—who carry on a wholesale exportation of this vegetable, besides largely supplying the hotels and restaurants of the neighbourhood.

Most botanists recognise two varieties of the edible or common mushroom; but they may fairly be considered as decided species. Another species, *A. pratensis*, or meadow mushroom, the Champignon of West-end cooks, sometimes finds its way into the first-class kitchens of the metropolis, but only occasionally, not being cultivated. Of the common mushroom, one kind is larger, whiter on the upper surface, affects meadow-land and moist open

situations, is composed of a greater amount of pithy substance, a smaller depth of the gills, with a flavour which is more insipid in respect to strength, and less aromatic to the taste. The great point of distinction, however, is that its milk-white skin and its stalk, especially before its growth is completed, if slightly rubbed or bruised, assume a light yellow or primrose tint a few minutes afterwards. This kind is perfectly wholesome, though its property of turning yellow, on abrasure of the cuticle and pithy substance, is shared in common with several dangerous species. It is doubtful whether this larger variety is reproduced by the process of mushroom culture. I believe that it is not. The true mushroom has the cuticle more whitely brown, with brownish-gray patches when about three-quarters grown; the pithy part is more fleshy, and slightly nutty in substance; the gills, varying according to age from dull pink to chocolate-brown, are more abundant and succulent, producing at last the dark juice of which the sauce known as ketchup is made; and above all, the fungus does not turn yellow when crushed. This species is cultivated without difficulty; and directions for its cultivation are all the more desirable, not only because danger from poisonous kinds is thus avoided, but because the sample so produced is really better than those found wild in point of quality, besides the convenience of being attainable at many times of the year when the others are not to be had.

In the gardens of the wealthy, there are houses heated by flues for the growth of mushrooms; but the object can be attained in any dry shed, empty stable, or out-house, or cellar (light not being necessary), where the temperature does not fall below 45°, nor rise above 70° of Fahrenheit. Various kinds of materials are recommended for making mushroom-beds; but the best is fresh manure from horses that are highly fed, mixed with light soil in a small quantity. An idea is prevalent with very many gardeners, that by far the most efficient manure for the purpose is that which is dropped by entire horses.

Mushroom-beds may be made of any size. Suppose one side of an empty building or a cellar is at command. Make an upright boarding, *b b*, of any rough planks, about 30 inches high from the floor, and about three or four feet in front of the wall. A wider bed would be inconvenient to reach over to gather the crop. If a succession of crops is preferred to having one large crop at once, divide the bed into three or four compartments, something like shallow wine-bins, by wooden partitions of the same height, and reaching to the floor, as at *d d d*. To make the bed or beds (and it is better to begin to work at once two contiguous compartments, as *A a*, because, even if made on the same day, there will often be a difference in the date of their becoming productive), take a quantity of the manure, and spread it so as to lie about four inches deep. Beat it down firmly with a mallet. After a few days repeat the same, and again at intervals, till the bed of beaten manure is from fourteen to eighteen inches thick. Being fresh dung, of course it will heat; but too much heat is fatal to the germs of mushrooms: to ascertain, therefore, the degree of heat, put two or three sharp-pointed hard wood sticks into the bed, and leave them there. When, upon being drawn out, they feel about milk-warm to the touch, it is time to inoculate the bed with mushroom spawn; but the heat must be rather on the decline than otherwise.

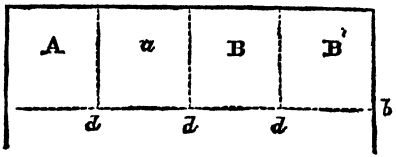

Fig. 7.

Bricks of mushroom spawn may be had of any respectable nurseryman, and of most gentlemen's gardeners where the horticultural establishment is maintained on a large scale. If kept in a dry and cool place, they may be preserved for an indefinite length of time, as the filaments of mycelium, which constitute the spawn, have the property of lying dormant even for years, and then of

reviving under circumstances favourable to their growth. If once excited by combined heat and moisture, they are apt to perish, and lose their reproductive powers. Hence, an airy garret is often the best store-room for mushroom spawn, which may be made at home, by cutting up an inoculated bed into bricks, and drying them, at the moment when the veins of spawn have run through the mass, before the growth of mushrooms has actually begun. It is worth while devoting a bed to the production of spawn only, which will render you independent, by supplying a stock for some time forward, and by giving you an opportunity of obliging a brother gardener from whose stores you may be glad of something in return.

Break the spawn into pieces about the size of a hen's egg. Place them all about the bed, at distances of from fifteen inches to a foot from each other, and a couple of inches below the surface: beat the whole hard down. Be careful not to let the heat increase above the degree before mentioned, otherwise the spawn will be destroyed, and the bed must be restocked with fresh spawn. Indeed, for security's sake, it is always best to repeat this when the heat is on the decline. The spawn soon spreads itself through the mass of the bed, in the form of irregular filmy threads, much in the same way as a mouldy Stilton cheese increases in ripeness from day to day. The progress, however, of the spawn is very uncertain; sometimes it will lie dormant for weeks. Too much watering destroys the bed, while a certain degree of humidity is absolutely necessary. After all danger of increased heat is past, cover the bed with light soil two or three inches deep: then beat it down hard. Mushrooms always do best in a firm hard soil; however hard, they will find their way through it. They have even been known to raise the pavement of a cellar-floor, and the flag-stones of a courtyard. Cover the coating of beaten earth with a light stratum of straw,—or better, of fine hay. Examine the test-sticks which were originally placed in the bed. If they are lukewarm, all is right; but if the heat is too much increased by the covering of

hay, remove it for a time. If the place is warm and dry, this covering may be dispensed with altogether, though it is far better to retain it, for the sake of maintaining an equal temperature and humidity. Symptoms at last become apparent that the capricious crop is about to burst forth. In five or six weeks after the spawning, more or less, the mushrooms ought to appear. The uncertainty of the date of the crop is one source of its interest in an amateur's eyes. As the time approaches, the first mushroom is looked for with as much anxiety as a poultry-fancier feels when a valuable pullet is likely to lay her first egg. As a warning of what is coming, the whole surface of the bed breaks out with a violent eruption of little white pimples, at first not bigger than pins' heads. It is actually seized with the mushroom-pox, which has been communicated to it by the leaven of spawn introduced. The pimples daily grow bigger and bigger. As you watch them, you see they are coming to a head. They grow into buttons, which spread into mushrooms.

A mushroom-bed continues productive for a month or six weeks; therefore, if a continued succession be required, the compartments *B*, *B'*, should be filled with manure, to be treated as directed, a month or so after the bins *A*, *a*, have been set going. A gentle watering now and then with tepid water hastens the growth: but too much causes the spawn to rot, and then, of course, the bed remains unproductive. With every care, a mushroom-bed bears when it pleases; and it does not always please it to bear. Rough and injudicious modes of gathering will also give a serious check to a bed, even when it is in full bearing. Each separate mushroom should be cut at the stalk with a sharp knife, taking care not to disturb the root in the least. On a prolific bed, the mushrooms sprout in groups. If the first-formed button is rudely torn up, the common root is disturbed in the earth, and the whole cluster which remains comes to nothing.

Mushroom-beds, prepared exactly like the above, may

also be arranged one above the other, on shelves, with an eighteen-inch or two-foot board in front, giving them the appearance of deep drawers. Sufficient space must be left between each shelf for the gardener to thrust in his head and shoulders, to examine the progress of the bed, and to gather the crop. Though less convenient than the open bins, it is a good plan for economizing space. In the vast caverns, or worn-out quarries, tenanted by the French *champignonnistes*, or professional mushroom-growers on a large scale, the mushrooms are grown on ridges of quite an indeterminate length, sometimes several hundred feet, following the windings of the cavern, about a couple of feet high, and a yard in breadth at the base, containing manure, and covered with sifted earth, flattened close by the back of the spade, like miniature ridges for the preservation of beet-root. No straw is used to cover them, nor is needful in such an invariable condition of moisture, atmosphere, and darkness. The ridges thus run along the course of the intricate caves, which form quite a subterranean labyrinth, and which are made to contain one, two, or three ridges, according to their breadth of floor, leaving a convenient pathway between each ridge, for the labourers to walk and gather the produce. The ridges, when exhausted, are removed through openings fitted with gratings, to the upper air, through which the necessary materials are let down and taken up, and which also serve as ventilators, without which the men employed could not continue their labours. The spent substance is thus replaced by fresh manure, for the generation of fungi.

By an easy adaptation, the ridge system of mushroom-growing may be practised in the open garden; but only during summer, or at least mild weather. R R, is a section of the ridge, of any convenient length and height. At each end is an upright post, P, supporting a horizontal beam, B,

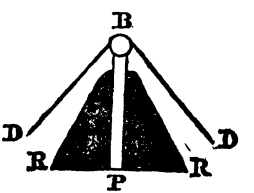

Fig. 8.

to which are attached, by hinges, facings of boards to cover each side of the ridge. Suppose them to be a couple of old doors, D, D, to serve as a temporary make-shift. The bed is made, heated, and spawned as before; a sufficient covering of straw is then laid between the faces of the ridge and the moveable roof of boards, which protect it from rain, sunshine, and wind, and which can be lifted at pleasure, whenever the gardener wants to examine his crop.

Mushrooms may even be grown in beds in the open ground, without any covering of straw or substratum of dung exclusively, though with much less certainty as to the time of their appearance than by any of the above methods. In spring, prepare a richly-manured bed, which will serve for the purpose of sowing cauliflowers, cabbages, or any other plants to be transplanted at an early period of their growth, scattering over the whole a tolerably liberal sprinkling of carrot-seed, and inserting lumps of mushroom-spawn at short intervals. When the cauliflowers, &c., are removed, the carrot-leaves will serve to shade the bed and retain the moisture: and they may be drawn young, if they grow too thick. At some time during the season, quite dependent on atmospheric chances, a crop of mushrooms will make its appearance,—or perhaps it will not. But if a promising knot of buttons show themselves on any part of the bed, it will be as well to encourage the whole by a covering of straw or by a few light mats thrown over it. The same object may often be obtained by forming such a seed-bed in a sheltered corner with the materials from a worn-out mushroom-bed. An unexpected supply will occasionally present itself long after the original bed has been forgotten.

SALAD PLANTS.

Lettuce—Lactuca sativa.—The acetarious vegetables now cultivated are a limited list to what they were of old. Evelyn, in his "Acetaria; or, Discourse of Sallets," proves that a more varied and artistical *sallet* could be

served two hundred years back than now, and that our only mode of advancement in this way is to revive old fashions. It is true that pickles were included in the term. Thus, he says:—"The abortive and after-fruit of melons, being pickled as cucumber, make an excellent sallet. The small green fruit of the potato (when about the size of the wild cherry), being pickled, is an agreeable sallet." But still, where is *our* list of "sallet-plants reduced to a competent number, not exceeding *thirty-five?*"—even although we may be inclined to refuse the sowthistle, so "exceedingly welcome to the late Morocco ambassador."

At the head of modern salads stands the lettuce, divisible into two classes; namely, Cabbage Lettuces, and Cos or Upright Lettuces. Of these there are very many varieties, and new ones are constantly being raised or imported. One of the newest,—May's Magnum Bonum,—is advertised as "the largest, sweetest, and crispest lettuce known. It may be sown all the summer, and will stand the winter." Other seedsellers will claim the same merits for their favourite kinds. The truth is, that there are so many good sorts, that the amateur can hardly go wrong in making his selection. The main point is to cultivate them well.

Cabbage Lettuces.—The Hardy Hammersmith; the Brown Dutch; the White Dutch; the Tennis-ball; the Drumhead, Malta, or Silesian; the Grand Admiral; the Texter; the Brown Spotted Roman; the Cabbage Victoria.

Cos Lettuces.—The Brown Cos, or Bath Cos; the Black-seeded Green Cos, or Egyptian; the London White; the Florence; Ady's White; the Paris Cos; the Spotted Aleppo; and lastly, the Artichoke-leaved Lettuce, a plant with curious and handsome foliage, which supplies excellent salad when tied to blanch. As a general rule, it is best to tie Cos lettuces as soon as they have formed their hearts; a few may be done at a time, to insure a succession. Persons who are curious to have the newest and choicest kinds of lettuce, should

procure their seed from Paris, though our own nurserymen will furnish all that can be reasonably desired.

The best lettuces are those which stand the winter, and attain their full size and bulk in May and June. Sow, for seedling plants, a small bed broadcast the last week in August, on rich soil. At the end of October plant them out where they are finally to remain, on highly-manured beds. Each cabbage lettuce should have eventually a space not less than a foot square; Cos lettuces will take up somewhat less room. Both kinds may be planted twice as thick as they are intended to remain, in order to use the surplus when half-grown. It is safer to make *two* autumnal sowings, one a fortnight after the other. One will be found to succeed better than the other, but that success will depend on the chances of the season. Hand-lights are well bestowed on the protection of early lettuces. Waterings must be given during any long-continued drought. Light soil is better than clayey soil. It is needless to say that lettuces to stand the winter must be placed in a sheltered and sunny spot.

Spring-sown lettuces may be sown in pots or boxes indoors in February, to be planted out as soon as fine weather comes. In March, they may be sown in the open ground, and continually, for successions, during the months of April, May, June, and July. But in proportion as summer advances, the less will the plants bear transplanting, in consequence of the tendency to run up to seed. It is best, then, to sow in drills, thinly; and when the plants have three or four leaves, to thin them out with the hoe to a foot apart.; or the superabundant plants may be cut away with a sharp knife, to be used as *Laitue à couper*, hereafter to be mentioned. But after midsummer, lettuces are really not so good as before. Besides the deterioration of their quality towards the close of the season, they are particularly liable to the attacks of slugs, snails, worms, and insects. The most approved autumnal salads are those mainly composed of endive, though extreme horticultural skill will produce good lettuces even then.

A very delicate salad in early spring may be obtained from the *Laitues à couper*, or the lettuces to cut, which are sown thickly, like mustard and cress, in frames, on hotbeds, and under bell-glasses, and when they have three or four leaves, are cut with a sharp knife, dividing their tap-root just *below* the surface of the earth. Any kind of lettuce-seed will serve for *laitues à couper*, but green kinds are preferred to brown, and cabbage to Cos. The Parisian gardeners make use of early dwarf kinds, which would scarcely form a heart if suffered to stand. Favourite varieties are *La petite crêpe*, *la gotte*, the *laitue chicorée*, and the *laitue épinard*. These, as well as every other salad plant, must never be stinted in their supply of water, if they are to retain their crispness. Salads that are starved, and allowed to grow slowly, are sure to turn out tough and ill-flavoured. By successive sowings, and the employment of hotbeds, *laitue à couper* may be had all the year round. Lettuces, as an article of diet, are said to have a slightly anodyne or tranquillizing effect on the system.

Endive—Chicorcium endivia.—There are two distinct sorts of endive, of which there are several sub-varieties; but amongst these latter, the differences are unimportant. The Curled Endive—the *Chicorée frisée* of the French—is the prettiest to look at; the Broad-leaved, or Batavian Endive, is the most useful, and the best to eat. This is highly esteemed in France under the name of *Scarole*. The gardener will probably find room for a little of each.

For main crops, sow broadcast, not too thick, on a well-manured seed-bed, about the middle of June. Sown before that time, the plants are apt to run to seed at Michaelmas. During July and August, make successive transplantations, either in single rows at distances from eighteen inches to two feet, or in beds, at eighteen inches apart each way at least, and in quincunx order. Unblanched endive is scarcely edible as salad, though cooked it makes a very palatable dish of vegetables. When the plants are full-grown, or nearly so, blanching

is performed in two ways: rudely, by covering the plant with tiles or bricks (which will harbour slugs and worms), or with an inverted flower-pot having a cork in its hole, or with a seakale-pot;—much better and more effectually, by tying up the plants with bast, or any other ligature that does not cut the leaves. Only a certain number should be so tied up at once, in order to have a constant succession. If a course of wet weather sets in, the tied-up plants are apt to rot, which will not be the case with those whose hearts are open and free. In November, the whole crop must be tied up; at the first approach of frost, take them all up with the spade, and set them upright in an airy cellar or shed, with the earth still hanging about their roots, and they will keep and furnish useful supplies of excellent salad till late in the winter, or even till spring. Dry weather should always be chosen for tying up the plants. On light soils, endive may be blanched by covering it with earth instead of tying it; but the practice is slovenly, and is almost sure to cause rotting, in damp seasons.

Chicory.—For an account of this excellent winter salad, Mr. Cuthill's own characteristic expressions shall be quoted. "When the plants have done growing, some time in November, the crop of roots are all dug up and stored by, like beet-root. In cutting off the leaves, you must not injure the centre; for out of the centre comes all the salad. In 1836, I had a quantity of mould put into a cellar, and planted a bed of Chicory roots as soon as they were taken from where they had grown during the summer. I planted three hundred roots in the bed, keeping them four inches apart, light and air entirely excluded. They soon began to grow, producing long, fine cream-coloured leaves, and when about six inches long, I sent them in as salad, cutting off the leaves carefully; for if you cut into the quick, it would stop a second, third, and fourth crop of leaves, which a root produces, until the cells of a root are as empty as a honeycomb, or until entirely exhausted. From the number of plants in the cellar, I could have supplied ten

such families as that I lived with; but it was not until the severe winter of 1838 that I sufficiently appreciated the use of chicory as a salad. The frost and snow were severe: all endive, lettuce, celery, &c., was gone rotten. Our salads were the very best in London. Every one that dined inquired what it was, and every one ordered it to be grown afterwards. In consequence of a letter that Loudon published in his Magazine from me, some fourteen years ago, it was soon grown in the fields for mixing with coffee.

"Ten years ago, when I came here (to Camberwell), I grew the roots with the view of introducing it as a salad into Covent Garden market. I had it planted into a pit where there was a flue, and covered the glass with mats to exclude the light. I also had five or six roots put into a large-sized pot, and turned the next smaller size reversed over the heads, stopping the hole in the bottom of the top pot to exclude air. This is very easy, and it answers well for a small family, just putting in a few pots in heat anywhere. In the winter of 1839, or early in 1840, I carried in a basket of this fine salad, tied up in sixpenny bundles, at a price which I thought would pay well. No one had ever seen it,—no one had ever heard of it,—and no one would buy it. An old herbalist (a Mr. Steptoe) came along; he was a buyer of pure dandelion leaves, and all sorts of things for foreigners. He bought all the chicory leaves, and paid nine shillings for it. Thinks I, 'my fortune 's made.' Next market morning, I carried a still larger quantity in; but when Mr. Steptoe came past, he merely shook his head, and passed on. 'Then,' thinks I, 'is my first-born child to fall to the ground like this, and in the first market in the world?' When he returned, 'Here, I have plenty more for you,' said I. ''Tis of no use,' said he; 'I have only sold a few bunches to foreigners.' Then I said, 'Take the lot this time for nothing.' He did so a third time, with no better success; then I gave it up. 'Poor John Bull,' thinks I, 'you despise the finest of all salads, the finest of all tonic bitters, and that too at a fair price;

but you do not mind being cheated by paying three and four times more than you ought to do for your chicory, misnamed coffee.' But I am in hopes even now to see it largely brought into public markets. It sometimes takes many years' hard fighting to persuade people to their own benefit.

"In the various places I had lived in previous to my finding out chicory, I had been continually annoyed, by ladies and gentlemen who had travelled abroad, telling me how much superior their salads were to the English salads. A Scotchman, like me, did not believe them; for we gardeners think no place like our own for good things. Since then, and since free trade has been introduced, I am of a very different opinion, seeing so many fruits and vegetables coming over; such as pears, plums, apples, grapes, peaches, nectarines, apricots, peas, potatoes, beans, green gooseberries, onions, and many other things."

Barbe de Capucin, or *Capuchin's Beard*, is consumed in large quantities in Paris during winter and early spring. It is the same thing as the foregoing chicory; only the object of the French gardeners is to get it as small, instead of as fine as possible, like Mr. Cuthill. For this purpose, chicory seed is sown in spring, broadcast and very thick, on poor meagre soil. The result is, that the chicory is starved, and a quantity of long, straight, slender roots are produced. At the commencement of winter, these roots are taken up and tied in bunches after all their leaves are removed, care being taken not to injure the central bud. This task is a work of patience. The bundles of chicory roots are then removed to a perfectly dark cellar, where a bed of garden-mould mingled with leaves has been prepared. The bundles are planted in the bed, the roots begin to vegetate, and send forth long, narrow, yellowish-white leaves, which constitute the salad. The bunches are simply taken up and brought to market, roots and all, just as they are; and the sample so offered really has a slight resemblance to the hoary beard of some venerable monk.

Capuchin's beard is a most wholesome salad, though somewhat hard and with a tinge of bitterness. NOTE.—This and chicory are admirably adapted for furnishing salads on shipboard, when a vessel is far away from land. Roots planted inside barrels half-filled with mould, would afford a welcome supply. The barrel-head would be sufficient covering to blanch it; and on board ocean steamers, there would be no difficulty in forcing a succession of salads at pleasure.

Dandelion—Leontodon taraxicum.—Dandelion is largely sold for salads in Paris. The country people eat the shoots that are blanched by the earth of molehills. An imitation of Barbe de Capucin may be obtained from it, by taking up the roots and treating them in the same way, in a warm cellar or any other dark place. This, and one or two other salad plants, are mentioned here, principally for the purpose of reminding the reader of the resources open to our soldiers and sailors, when marching across country, encamped, out at sea, or landed on a wild shore. Many plants that would be scorned by the gentlemen of England who sit at home at ease, would be thankfully received both as pleasant and healthful, by the working members of our army and navy.

Corn-salad, or *Lamb-lettuce;* in French, *Mâche, Coquille, Boursette, Doucette, Blanchette — Valeriana locusta.*—Of this there are several varieties. Italian corn-salad, is a distinct species, *V. coronata,* with broader and light-green leaves, and held in most esteem.

The value of corn-salad is its earliness. It grows wild in cornfields throughout Europe. Another of its French names is *Salade de blé,* or Wheat salad. Sow in shallow drills six inches apart, in August and September, to obtain successions for winter and spring. It may often be had from beneath the snow. The leaves are green and tender, but have somewhat of a physicky taste. "The French," says Evelyn, "call them *salade de prêtre,* priest's salad, from their being generally eaten

in Lent." They certainly deserve a place amongst the penitential herbs; the stomach that has admitted them is apt to cry *peccavi*.

Garden Cress—Lepidium sativum.—Sown in shallow drills, to be cut for small salading, while still in the seed-leaf, or soon afterwards. Best grown under a hand-light, or in a frame. In the open ground it is apt to be tough.

Mustard—Sinapis alba.—Cultivated the same as above, and usually eaten together with it; but as it grows quicker than cresses, to come in at the same time, must be sown a few days later.

Rape—Brassica napus.—Eaten in the seed-leaf, like the two foregoing.

American Cress—Barbarea præcox.—Grows wild in watery places; is strong, pungent, and not worth cultivation.

Garden Rocket—Brassica eruca.—Of no greater value than the above; though both are useful antiscorbutics for persons who can only procure *wild* salads. Not unusually eaten in France, where it comes up in gardens like a weed, and is looked upon as a sort of half-savage plant, which it would be cruel to treat as an utter outcast.

Brook-lime—Veronica beccabunga.—A common brook-plant, with blue flowers and shining dark-green leaves, which may be eaten when no better salad is to be had.

Water-Cress—Nasturtium officinale.—An excellent plant, which, in its wild state, is sufficient to furnish nearly the whole of the vast amount consumed. It is probable that the railways have greatly diminished its cultivation about London. Grow, or gather, only in *running* water. Otherwise you will often find frog spawn and other intrusive matters adhering to the roots and stems.

Wood-sorrel or *Shamrock—Oxalis acetosella.*—The leaves and flowers make a delicate wild salad in spring.

Red Beet—Beta vulgaris.—The root boiled and

sliced when cold (it is better baked in a slow oven), is a favourite and ornamental addition to salad. Its colour contrasts well with celery. Sow in shallow drills a foot apart, dropping two or three seeds at intervals of nine inches. When the plants have three or four leaves, thin them to one, sparing the plant which is the deepest in tint. During summer, hoe frequently, and store them indoors before frost arrives.

The Radish—Raphanus sativus.—Radishes in the seed-leaf make an excellent salad, but they are principally cultivated for the root. There are long radishes and turnip radishes of various colours; white, pink, purple, scarlet. The Early Scarlet Short-top is a great favourite. The great point is to grow radishes quickly, and never to let them want for water. Spring radishes are seldom good for much, unless grown in frames, or with some sort of covering. Market gardeners economize both space and time by sowing radishes on the south border on which they have planted their very earliest potatoes. The radishes are covered with mats every night; and they are hurried on in their growth, and disposed of quickly, by the time the potatoes make their appearance above ground. The first sowings may be made in January or February; afterwards, as often as you are likely to want them young and fresh. To save the trouble of frequent waterings, damp spots may be chosen as the spring advances. In summer, a north border is to be preferred.

The Spanish Radishes are a group little known in England. They, however, are consumed in large quantities on the Continent, and rank high in popular esteem. They are large, coarse, and strong-flavoured, often reaching the size of a turnip; but they are also drawn at earlier stages of their growth. They have the great merit of being hardy, as well as of increasing in size, instead of running up to seed or growing woody, like common radishes; and if they are not delicate enough for fastidious persons, they are of extreme utility to the body of a nation, to the labourer and the artisan. In

camps, and on shipboard, they are a most acceptable variety of the ordinary diet; because their bulk, when full grown, renders them quite a cut-and-come-again vegetable. The principal varieties are the White Spanish, the Yellow Spanish, and the Black Spanish; but there are also Purple, Brown, and Grey subvarieties. For crops to stand the winter, sow in drills nine or ten inches apart; when the roots are of the size of an ordinary Turnip Radish, they may be drawn for use till the plants stand far enough asunder to avoid the danger of spindling up. For summer consumption, sow in April or May. Spanish Radishes are often thrown into soup, to remedy the absence of turnips in spring.

Rampion—Campanula rapunculus.—A native Bluebell, whose root is scraped and eaten like a radish. If it once gets into your garden, you will never get it out again; and therefore it is not worth while sowing the seed of so troublesome an inmate. Still, the traveller who has no radish-bed to go to, may be glad to recognise it in the course of his journey.

CUCUMBERS AND GOURDS.

The Cucumber—Cucumis sativus, in many varieties.—The choice must be made according to circumstances. Paxton recommends the Southgate, or Long Green Prickly, as easier to manage than other kinds. Mr. Cuthill says:—"I have bought all the new cucumbers advertised, but I may without fear of contradiction say, that I have never found one so early and so productive as my Black Spine." The Long Prickly, adapted for ridge culture; the Short Prickly, for pickling, productive; the Cluster Gherkin, for pickling, an immense bearer; the Stockwood, a handsome variety for forcing or ridge culture,—may all be depended upon.

Out-door or natural cucumbers may be sown on small hillocks, under hand-lights, in May. Even hoops covered with oiled paper will do. As the summer comes on, the

plants will dispense with this protection, but the result must entirely depend on the season. Frame cucumbers are more delicate, and also more digestible, than those grown in the open air in England. Very tolerable fruit may be had by planting cucumbers at the foot of a south wall, and allowing them to run over the face of it like vines. If a trellis is fixed to the wall, the plants will only want a little guidance.

For humble gardeners and small establishments, there can hardly be a more economical mode of cucumber-growing than that recommended in Paxton's *Cottager's Calendar*:—"To form a pit, mark out, in some dry sheltered corner of the garden facing the south, a suitable spot six feet wide, of any required length, and drive down stout stakes at the corners. Then procure a quantity of grass sods cut square, about three inches thick, and build with them a back-wall two feet three inches high, and a front one fifteen inches. The walls may be a foot or fifteen inches thick, to resist frost in winter. The stakes should be driven to the exact height of the walls on the inside, and when finished, a strip of wood may be nailed along their tops to make a level surface for the lights to rest upon. These must be formed by nailing four light pieces of wood together, the side pieces six feet six inches long, and the end ones three feet six inches. These frames should be crossed with twine, to support a covering of oiled calico or paper, as a substitute for glass. If turves cannot be readily obtained, a number of stakes may be driven down, and wattled with rods, or lined inside with slabs, and a wall of earth, as above, built against these. This simple erection may be speedily made by any person, and will prove of great use. The surface surrounding the pit should be somewhat lower than the interior, to preserve it dry. In this homely pit any kind of cucumber may be grown during summer. If a plant or two can be obtained of a size fit to plant out early in May, it will save some trouble; otherwise, about the middle of April, throw into one corner of the pit two or three barrow-loads of dung, which will communicate a

little warmth. Then sow in a pot, half-filled with light rich soil, the required number of seeds, covering them lightly, and place over the mouth of the pot a piece of flat glass, setting the pot upon the dung. When the plants are developing the first rough leaf, they may be potted off two or three in a pot, replacing them on the dung, and keeping the lights close for a day or two. As soon as they have perfected the first rough leaf, stop them,—that is, pinch off the top close to that leaf; and prepare for planting them out in a few days after, by laying some long litter or turfy soil, about three inches thick, as drainage; then along the centre of the pit form a ridge of rich light soil, one foot thick, and plant a pot of plants under each light. The reason for forming a ridge of soil along the centre is, to allow frequent earthings to the plants as their roots appear on the surface; by which means they grow faster than when planted at first in a great body of soil. All that will be required after, besides these earthings, is a regular supply of air, removing the lights wholly the greater part of the day, after the end of May; the stopping and training a certain number of bearing shoots, removing all that are weak or seem crowded, and pegging out the remainder without confusion."

More ambitious apparatus, in immense variety, may be had of the makers of horticultural articles; but those, being the means of forcing cucumbers and other garden produce, are beyond the scope of the Book now in hand. Leading points in growing frame cucumbers are, to pinch off the shoot a joint or two above the fruit, or even at the fruit itself, to keep the frame clear of useless vine; to remove superabundant male blossoms; to administer diluted liquid manure so long as the plants continue in full bearing; to bear in mind that cucumbers delight in a combination of heat and moisture, and therefore never to water with *cold* water in hot weather; for to the application of this many of the diseases of cucumbers are attributed; to regulate carefully the admission of air, maintaining a circulation without hot dry currents; and to

destroy wood-lice and other insect vermin by keeping four or five toads in each pit, or by admitting the frequent visits of quite young Bantam chickens.

Nations vary greatly in the esteem in which the cucumber is held. In England the first cucumbers fetch high prices; in France, except for pickling, they are in but slight request; in Russia, salted cucumbers form a popular mess. A well-known recipé to dress cucumber is, to slice it as thin as possible, to add salt, oil, vinegar, and pepper, and then to throw it out of the window; but for those who are afraid of the crude article, cucumber either stewed whole or fried in slices, constitutes a palatable and digestible dish. In either case, the sauce for it should contain a decided dash of vinegar. There are one or two varieties which, instead of being green, have the outer skin entirely white, or light cream-colour, giving the fruit a very remarkable appearance. Cucumber-seeds preserve their vitality for many years. Old seeds are believed to produce plants that are more fruitful and less luxuriant in growth than those from new seeds. When old seeds are not to be had, gardeners give them an artificial age by wearing them in their pocket. The seeds of these, and of other tender plants that are raised in hotbeds to be subsequently planted out, are best sown in shallow pans, filled with a mixture of well-rotted manure and light *loose* earth: leaf mould is excellent for the purpose. The reason is the same as for pricking out celery-plants on a stratum of earth on a *hard* surface; *i. e.* the tap-root soon gets checked, and then lateral fibres are shot out, which makes the roots generally more fibrous and bunchy, and therefore better adapted for transplanting, than if sown in a deep pot.

The Melon—Cucumis melo—has no right to make its appearance here, except for the sake of mentioning that a pretty little old-fashioned variety,—Queen Anne's Pocket Melon,—which produces green-fleshed well-flavoured fruit, the size of a large orange, may, in very fine English summers, be grown on a trellis against a

south wall, in the same way as indicated for cucumbers. It also answers well in a cucumber-frame.

Gourds and Pumpkins—Cucurbita of many species and varieties.—Pumpkin-pie is a favourite with many of our peasantry: but its real merit, like that of stone or flint-soup, lies in the ingredients that are added to it. Vegetable Marrow (*Coucourzelle à la moelle*, of the French) is the most relished of its class as an esculent, in England, and that only in its green or half-grown state. In vain will Mr. Cuthill recommend it ripe; people's palates are even harder to convert than their hearts and minds. "After two years' trial," he says, "of ripe Vegetable Marrow as food, having used it with all sorts of meat, I can confidently recommend it as a first-rate winter vegetable. Many object to eat it in a ripe state, and it may be many years before it receives universal acceptance as a winter vegetable; but in this it only shares the fate of many other things now common on our dinner-tables. The potato passed through the same ordeal; many a weary day did this valuable tuber struggle for a place. When ripe, vegetable marrows must be stored in a dry place, from which frost is excluded. The under-ripened ones should be used first. In boiling ripe marrows, cut them up into pieces of four or five inches in length; take out the pith and seeds, but do not remove the skin before boiling. Then boil in plenty of water with a little salt. After three-quarters of an hour's sharp boiling (this depends upon its ripeness), let the pulp be scraped out into a dish, and press out all the water that it has imbibed during the process of boiling. Add pepper and salt, and mash as with turnips; and no one who has not tried it, can have any idea what a fine winter dish it makes. To captains going long voyages, it would prove most valuable. Vegetable marrow, in its young state, makes a famous pickle. Cut it into two or three inches in length, as cucumbers are served." In Italy, young marrows and other immature gourds, are split or sliced, and fried with the skin on, when about three or four inches in length. The skin thus becomes crisp, and the

flesh really acquires a marrow-like consistency. Throughout the same part of Europe, gourd-seeds are used in cakes and confectionary, as we should almonds. At Naples, the Portmanteau Gourd, or Naples Gourd, a large cylindrical fruit, more than half a yard long, is simply cut in halves, baked in an oven, and then eaten cold in slices.

But, with the exception of the Vegetable Marrow, Pumpkins and Gourds may be regarded in England as plants rather of ornament than of use. They require an inconvenient extent of space; but their luxuriant vines, their bold foliage, and their noble-looking fruit, afford powerful elements of decoration in the hands of those who know how to use them. The Potiron Jaune, or Mammoth Gourd, attains an enormous size. (If monsters are wanted, only one fruit should be allowed to each plant.) The writer had one presented to him which filled a donkey-cart. The Orange Gourd, both Smooth and Warty, make pleasing chimney ornaments; as also does the Pear-fruited Gourd, with its shining green and yellow skin. The Snake Cucumber is an extraordinary plant, producing green vegetable serpents from three to six feet in length. The Club Gourd, a favourite with the Venetians, bears bludgeons a yard or more in length; while our American relations delight to cultivate a variety of vegetable marrow called the Crookneck, which has small yellow slightly warty fruit, bent in two almost at right angles at one-third of its length. The Bottle Gourd actually supplies drinking-vessels. The Turk's Cap is a faithful imitation of a turban, besides being one of the best to eat.

Gourds are safest sown, each seed in a separate small pot, in a frame or hotbed, some time in March. The plants must be gradually hardened by giving them air as often as genial weather permits. At the beginning of June, they may be turned out with the balls entire, and protected by a hand-light, or oil-paper cap, till the summer heats cause them to luxuriate in rampant growth. Windy exposures are most unsuitable, on account of

the breadth and tenderness of the leaves. Abundant supplies of tepid water may be given. Some gardeners throw earth over the principal stems after they have grown to any considerable length. Roots shoot forth at the joints so buried, and the fruit derives benefit from the additional nourishment. When gourds are made to climb over walls and arbours, the same object may be attained by passing the leading shoot through a concealed pot of rich earth.

HERBS, ROOTS, FLOWERS, AND FRUITS,

Employed for Confectionary, Garnishing, Medicine, Pickling, Preserving, and other Domestic purposes; arranged alphabetically.

Alecost, or Costmary—Tanacetum balsamita.—A pleasant aromatic hardy perennial, with a creeping root, which delights in a warm dry situation. It was much used by our ancestors, to throw a few sprigs into their favourite tankards of ale, wine, and cider; whence its name. Like the blessed thistle, tradition connects it with the history of the Virgin Mary. It is easily propagated by division of the roots. The tender shoots may be added to salads.

Angelica—Angelica Archangelica.—A tall-growing plant of indefinite duration, though really one of the biennials, thriving best in damp and shady situations, of a peculiar and agreeable aromatic flavour. Candied angelica-stalks are so easily procured from confectioners, and their consumption even in large families is so small, that a root or two would be cultivated rather as specimens than for home preparation. A few stools might be appropriately placed in some moist corner of the shrubbery where rank vegetation is ornamental. Propagate by seed sown as soon as it is ripe, to be afterwards transplanted to the desired spots. Cutting down the flowering stems as they appear, causes the plants to last longer; but then their luxuriant character is destroyed.

Anise—Pimpinella anisum.—A delicate annual, native of Egypt, whose seeds are much used by distillers to give flavour to cordial liqueurs. It is cultivated for this purpose in the south of Europe, whence its seeds are imported. In England, its leaves are employed for garnish and seasoning, in the same way as chervil. Sow in a warm border after all danger of frost is past, thinning out the plants if they rise too thick. It will not transplant.

Balm—Melissa officinalis.—A robust-growing hardy perennial, whose light green leaves, on being rubbed, give out a delicate citron smell. Balm-tea is a sudorific and febrifuge in high repute amongst village doctresses. Balm-twigs are also a useful tonic and stimulant to give to the smaller domestic animals when ailing; such as rabbits, guinea-pigs, kids, and lambs. Propagate by dividing the root in autumn. Balm grows so vigorously, that it may be used to screen an unseemly corner, dilapidated wall, or heap of dry rubbish.

Basil—Ocymum basilicum.—Sweet basil, as it is generally called, is, as its name imports, one of the royalties amongst sweet herbs. Cooks say that it, together with knotted marjorum, is a grand secret in the composition of good mock-turtle soup. Dried basil, however, does not retain its flavour so well as dried marjorum, but is best used green, and is therefore not easily attainable in winter. It is a tender annual, exquisitely aromatic, and is usually raised in pots in a hotbed, to be pricked in the open ground at the end of June; the seed, however, may be sown at once before a full south wall in a very warm dry border. Another species, the Least, or Bush Basil, *O. minimum*, is a great favourite in France as an ornamental pot-plant for the decoration of window-sills and shop-fronts during summer. It is equally aromatic with the former, with abundant miniature leaves and dwarf close-growing habit. Both are natives of India. Seed may be had of nurserymen, who import it from warmer climates than our own. There are several varieties of these two species.

Borage—Borago officinalis.—"I, Borage, give courage," says the old rhyme; though we should rather take it to be a cooling plant, from the smell of cucumber it gives out when bruised, and the quantity of nitre it contains. There are two varieties of this ought-to-be annual, one with sky-blue, the other with snow-white flowers, the foliage being similar in both. It is scarcely used now for any other purpose than to decorate with its flowers, combined with those of nasturtium, a salad of lettuce, together with which they are mingled and eaten. They are thus grateful to both sight, smell, and taste; but it is not easy to have them fresh on a London sideboard. Faded, they are as worthless as the flowers out of a lady's last summer's bonnet. Borage once sown in a garden will take care of itself ever afterwards, because its numerous seeds drop to the ground the moment they are ripe, and come up abundantly the following season. Bees are fond of borage; and its long succession of flowers claims for it a place in every bee-garden.

Burnet—Poterium sanguisorba.—Such a thing as a good salad is now never dished in England, if there be truth in the Italian proverb, "L' insalata non è buona ne bella, ove non è la pimpinella;" or, "The salad is neither good nor good-looking where there is no pimpernel." This pimpernel is our common burnet; "but," says Evelyn, "a fresh sprig in wine recommends it to us as its most genuine element," which may well account for its being "of so cheering and exhilarating a quality." It is now little used except for tankards and garnishing. The simplest mode of propagation is by dividing the roots, which are perennial, early in spring. It likes a dry and chalky soil. Its pinnated foliage is peculiarly light and elegant. It is supposed to be medicinal for rabbits and sheep.

Capsicum—Capsicum annuum, cerasiforme, grossum, three species, with several varieties.—These plants belong to the *Solanaceæ*, or potato family, and furnish the well-known Cayenne pepper. They all require to be raised in heat, but will do tolerably in a warm sheltered

border during the summer months, when we *have* a summer. Hot-house culture is best suited to them; still, they may be made to render good service as ornamental pot-plants, when their red or yellow pods are ripe. The pods, either green or ripe, are used in pickling; sometimes also in stews, when high seasoning is required. Capsicums may be raised under a hand-light, care being taken to protect them from the least touch of frost.

Caraway—Carum carui.—An umbelliferous biennial, whose seeds are extensively used in cakes, thence called "seed-cakes;" and also to flavour distilled waters and liquors. Caraway is the object of field culture in Essex, and on other stiff soils. For a garden sample, sow in autumn as soon as the seed is ripe, and thin the plants afterwards to a foot distance.

Chamomile—Anthemis nobilis.—The flowers are used to make a bitter tonic tea, and are also employed in fomentation. The whole plant, which is a low creeping hardy perennial, is bitter and aromatic. The double-flowered variety is preferred on account of its beauty, as well as because its flowers, when dried, occupy a larger bulk of space; but the single flower contains, in the central yellow florets, a greater proportion of the aromatic principle. Propagate by parting the roots, and plant in any well-drained soil. It is believed that chamomile thrives the better for being trampled on. The flowers are slowly dried in the shade as they are gathered from time to time.

Chervil—Scandix cerefolium.—A highly aromatic umbelliferous annual, of low growth, with delicate foliage, and one of those known amongst French cooks as "fine herbs." It is largely used, though in small quantities, chopped fine, in salads, stuffings, sauces, and omelettes. It is also employed for garnishing. Inexperienced persons might mistake fool's-parsley, which is poisonous, for chervil. To have a succession of young leaves, sow in early spring, at midsummer, and in autumn. Transplantation is best avoided.

Clary—Salvia sclarea.—A hardy biennial of the sage

family, to which rather indefinite medicinal virtues are attributed. Clary wine, made from the flowers, was the favourite mode of administering it. Raise from seed sown at the beginning of April, or from divided roots. The plant is rather curious than useful.

Coriander—Coriandrum sativum.—An umbelliferous annual, of easy culture, whose small round seeds are used to sprinkle on cakes before baking, and which also aids the druggist and the distiller. It is grown as a field crop on light rich loams in Essex. In gardens, sow during the first fortnight in March. Cumin is another umbelliferous plant, whose seeds are employed by spirit-rectifiers. Being mentioned in Scripture, it may be an interesting object in the herb-bed. It is biennial. The seeds may be sown as soon as ripe.

Dill—Anethum gravcolens.—A hardy biennial, powerfully aromatic, which would be usefully and largely employed in cookery, if we had not several superior herbs of the same class. Sow in spring; in autumn also, if a succession be required.

Egg-plant, Aubergine, or Melongene—Solanum melongena.—A tender African annual of the potato family. There is the purple-fruited egg-plant, and the white-fruited egg-plant. In France, the fruit, before attaining its full size, is largely consumed as a vegetable, fried. It is cultivated profitably in the neighbourhood of Paris, but the principal supply comes from the departments of the South. The violet kind is most esteemed for the table, and makes a delicate dish. In England, the white-fruited egg-plant serves for little else than as a decorative pot-plant on a dessert-table, or in a shop-window, where its snowy eggs render it a curious object. There are varieties of both kinds, with elongated and globular fruit. Sow early in a hotbed in light rich earth, and plant out in fruiting-pots, which may be forwarded in a cucumber-frame, or under a large hand-light or bell-glass. The egg-plant scarcely bears the open air in the climate of Great Britain.

Elecampane—Inula helenium.—A plant whose noble

presence alone ought to procure it admission to the medicinal plot. The root is tonic and aromatic. Propagate by division of the root.

Fennel—Anethum fœniculum.—A tall, feathery, aromatic, perennial, umbelliferous plant, with yellow flowers, which grows wild in England, especially on chalky spots, but which is so useful in sauces, and as garnishing, that its presence in the kitchen garden is indispensable. Dividing a stool, is the quickest way of propagation; but once established, it rapidly multiplies from self-sown seeds. An Italian variety—*finocchio*—swells at the root into a sort of bulb (after the fashion of celeriac), and is blanched and eaten raw, as we use celery. It is considered healthy in spring, being purgative. The flavour of fennel is not agreeable to every one; it ought not therefore to be indiscriminately used. A succession of young shoots is obtained by cutting down to the ground a portion of the plants as soon as they have attained the height of a couple of feet. *Very* severe frost will kill fennel; it will therefore be prudent to throw a little litter over one or two stools at Christmas.

Gherkins—Cucumis sativus, with innumerable varieties. —Gherkins, or young cucumbers for pickling, are mostly, in England, the half-grown, late-produced fruit, whose further growth is checked by the approach of autumn. The French, however, who are great eaters, as well as exporters of gherkins, cultivate several varieties of cucumber, called *cornichons*, especially for the purpose of gathering while small, not allowing any of the fruit to attain its full size, except such as is required for seed. Those who are choice in the article of pickles, would do well to procure this variety, which may be had of any nurseryman who has a French correspondent. The usual way is, to sow the seeds in the open ground, under a bell-glass. They may be treated exactly like any other open-air cucumbers grown in England.

The Hop—Humulus lupulus.—Englishmen who have not travelled, and who can always get beer and porter, cannot imagine the craving for bitters felt by persons

who have long been deprived of them. Wormwood is often made to supply the want. In the south of Italy, the young shoots of the hop-plant are sold in the market, to be boiled and eaten like asparagus. They form a tough and bitter dish of vegetables; and the relish with which they are eaten arises, no doubt, from their supplying to the constitution the elements of which it stood in need.

Horehound—Marrubium vulgare.—Horehound lozenges are sold by most dispensing chemists, as expectorant medicine. Village doctresses make a strong decoction of the leaves and stems, and administer it as tea, or in syrups, to persons afflicted with colds, coughs, and consumptions. The plant is easily recognised by its whity-green cottony look. Propagate by seeds and cuttings.

Horseradish—Cochlearia Armorica.—A favourite accompaniment to roast beef, which is almost peculiar to the British islands. In France, it is known by the name of *raifort*, is little esteemed, and is procured with difficulty, except in towns where large colonies of English are established. It is a perennial root which is difficult to kill, becoming almost a nuisance in neglected gardens. It likes a damp deep soil, and is best grown in a bed quite apart by itself, from which its mass of tongue-like leaves will emit their powerful and agreeable odour. If possible, two or three beds should be prepared, to be drawn upon in successive years. In March empty your intended horseradish-bed of earth, to the depth of a foot, or more. Break up the bottom well with a fork; lay therein regularly pieces of horseradish about an inch and a half long, crowns, or not, it is all the same; return the earth, and use the surface of the bed for the sowing of any small vegetables, which will be removed by the time the radish-shoots appear. At the end of the second summer, you will have really fine sticks of horseradish.

Hyssop—Hyssopus officinalis.—"The hyssop on the wall" need only be mentioned to claim our interest and assert its right to a place in our gardens. It is a low-

growing aromatic under-shrub, with blue flowers, though there are white and red varieties. Its use is to enter into those decoctions of herbs which, if they were over-rated by our forefathers as sovereign medicines, are, perhaps, too much undervalued at the present day. Propagate most safely and readily by dividing the root, and plant in any dry, warm, sheltered spot.

Iceplant—Mesembrianthemum crystallinum.—An annual succulent spreading plant, every part of which, except the flowers and roots, is covered with clear transparent vesicles, as bright as frozen dewdrops. Single specimens in pots are old-fashioned favourites with many gardeners; but the ice-plant well deserves cultivation on a larger scale, for the garnishing of dishes of fruit on a dessert or supper table, especially as it bears so well the atmosphere of heated and crowded rooms. Sow the seeds on a hotbed early in spring, and prick them out in the open border, where there is full exposure to the noontide sun, about the middle of June. In fine summers, they will produce abundance of their bright crystalline shoots. The surest plan is, to devote a small cucumber-frame, in a sunny corner, to the growth of a bed of ice-plant, the seed being sown on the bed itself, and covered as slightly as possible with earth.

Lavender—Lavandula spica.—Lavender-flowers, and lavender-water distilled from them, are universally approved perfumes, the produce of a tolerably hardy low shrub, which grows wild by the shores of the Mediterranean. It likes a dry soil, where it offers the best resistance to severe winters, and an open sunny aspect. A lavender hedge, where nothing formidable or troublesome has to be fenced out, forms a delightful boundary between garden and field. Propagate the plant by cuttings, or slips, in spring, covering them with a hand-light till they are well rooted and begin to shoot. In the autumn they may be planted where they are to remain. The consumption of lavender flowers in London is very considerable; the shrub is therefore subjected to field culture in favourable spots of Berkshire and Surrey.

Liquorice—Glycyrrhiza glabra.—Liquorice, in ordinary gardens, can only be looked upon as a botanical and economical curiosity. It is easily grown on a deep rich soil, and being perennial, requires no renewing. It takes three or four years to bring the roots to a marketable size, while cuttings of the roots are the best means of propagation.

Marsh Mallow—Althæa officinalis—is an emollient mucilaginous plant, in even higher repute amongst veterinary practitioners than it is with human herbalists. It likes a damp situation, and thrives best in the vicinity of the sea. All the mallows are sought after, more or less, on account of the same qualities. Several handsome species are cultivated in masses, chiefly as cattle-medicine. *The Tree Mallow—Malva arborea*—is a particularly striking plant, from six to eight feet high, and decidedly ornamental. It is best raised from seed, but the young seedlings bear transplantation well. Fine specimens are seldom seen inland. Though a native plant, any severity of frost destroys it, and therefore, like the cork-tree and the fig, it hugs the sea-shore. It is worth the pains of a little protection. Numerous seedlings will be sure to come up where the tree mallow has once flowered.

Marigold—Calendula officinalis.—A decoction of marigold-flowers is believed to have the effect of bringing out latent eruptions or inflammations of the skin, in such cases as scarlet fever, measles, &c., *the patient being kept warm meanwhile.* Supposing their virtue questionable, it is a good thing, both for sick person and nurse, to have access to simples in which they have faith. Marigolds increase abundantly from seed. The semi-double are preferable to the quite double varieties. The plant continues in bloom the greater part of the year. For winter provision, the flowers may be dried and kept in bags.

Marjorum — Origanum, of several species.—Sweet Marjorum, or Knotted Marjorum, *O. Majorana*, is so much better than the others of its genus, that it may fairly exclude them. It is perhaps the most delicious

sweet herb there is. It is a slender under-shrub, which may be preserved for several years at the foot of a south wall. It may be raised from seed, procured from a warmer climate than that of England; but may be propagated by parting the root, or by replanting the trailing branches which have taken root in the ground. Damp is probably as destructive to it as cold. A few plants in pots well deserve winter nursing indoors. It is an incomparable ingredient in soups, sauces, and stuffings, or to sprinkle the dried and powdered leaves over a joint of roast pork just before serving.

Mint—Mentha, of several species.—Spearmint, *M. viridis*, is the most useful garden mint, to be put, dried and powdered, into pea-soup, to boil with green peas, and to be coldly infused in vinegar, in a finely-divided state, to form mint-sauce with the addition of sugar. Common peppermint answers equally well; few connoisseurs would be able to taste the difference, with their eyes shut. Mint is included in the list of antispasmodics. A few roots stuck in the ground, in any damp shady corner, will soon spread so as to become troublesome.

Nasturtium, or *Indian Cress—Tropæolum majus*, and *minus*.—In England tender annuals, although in South America, whence they come, the former is perennial, and attains considerable altitude. A double-flowered variety of *T. minus* is propagated by cuttings, and must be kept in a greenhouse in winter. The flower-buds and green half-grown seeds are pickled to represent French capers; the full-blown flowers are eaten in salads. The immature seeds, as well as the buds, must be gathered from day to day. [NOTE, that there is a species of *Euphorbia*, or Spurge, vulgarly called the Caper plant, which, like the rest of its genus, exudes a milky juice, *and is poisonous*. Though rather ornamental, from the bold uprightness of its growth, it is best eradicated, for fear of accidents arising from its trivial name.] There are orange, brown, and variously-marked varieties, all propagated from seed; but since the introduction of the

brown-flowered sort, the species has been more given to sporting than before. Mr. John Cattel, of Westerham, Kent, advertises, as new and useful, two Dwarf Nasturtiums,—the Dwarf Crimson, and the Dwarf Scarlet. A distinct species,—the Potato Nasturtium, *T. tuberosum*,—is an ornamental climber, which flowers either very late or not at all, unless the root is more or less starved. It is mainly increased by tubers, which form at the root in tolerable abundance, and are of the size of small apples. The circumstance of their being eaten in South America has attracted attention to them; but their peculiar and disagreeable flavour forbids their acceptance by Old World stomachs.

Parsley—Apium petroselinum.—The consumption of this potherb in London, as a garnishing merely, amounts to something enormous annually. In Paris, besides answering the same purpose, it enters into dishes *à la maître d'hôtel*, and mincings of fine herbs, to an extent which defies calculation. Chopped parsley alone, with no admixture, is one of the best stuffings for salt pork or beef; while parsley and butter, or minced parsley thrown into *boiling melted butter*, to make it a good green, forms a pleasing overcoat to throw upon, and sometimes cloak the bad complexion of, boiled fowls, either hot or cold. Fried parsley, *i. e.*, the leaves thrown into boiling butter or oil, to come out sear, crisp, and dry, is a nice test of a cook's proficiency: so that in every garden, however humble, a parsley-bed is a welcome resource. Few plants have been more mixed up with popular sayings. There is a long-standing connection between parsley and the moon, with reference to the times both of gathering and sowing. From the long time it lies in the ground without germinating, it has been said that it goes nine times to the devil and back again before it comes up. From thirty-five to forty days is the period usually employed in making those journeys. In the north of France and Belgium, country people do not like sowing parsley with their own hands, because they believe it an unlucky act. They therefore

get the task performed by some wretched itinerant beggar, who, provided he receives a sufficient dole, raises no insuperable difficulty, under the persuasion that he already is as badly off as he well can be.

Curled-leaved parsley is much the handsomest, if not the best. Always, therefore, leave or transplant the earliest plants to stand for seed. Being a biennial, if successions are wanted, at least three sowings in the year must be made; say at the beginning of February, June, and September, respectively. In December, a few plants may be removed into a frame-light, to guard against possible failure during frost. Parsley roots, boiled, are no despicable substitute for carrots and parsnips. One variety, the Hamburg, is especially cultivated for this purpose, being sown in April, in drills nine inches apart. Parsley is believed remedial to the gravel in man, and the rot in sheep. Naples parsley is a coarse variety, which is sometimes blanched to be used like celery.

Pennyroyal—Mentha pulegium.—One of the mints, easily propagated by division of its creeping roots. Pennyroyal water was formerly much distilled as an antidote to spasmodic; nervous, and hysterical affections.

Purslane—Portulaca oleracea.—In proportion as the traveller approaches the German frontier, the more purslane-leaves will he find in his vegetable soups. They are occasionally eaten in salads, and were formerly in great request for that purpose. The whole foliage, as well as the trailing stems, have a peculiar cool and refreshing look. Procure purslane seed from Belgium or Flanders, where several varieties are known. Sow in May, in rows a foot apart. The seed is small, and only requires a very slight raking in. Purslane may be freely cut; a slight frost destroys it.

Radish-pods, green, and before the seeds have hardened, make an excellent pickle. Instead of leaving a few of the most crooked and ugliest roots to encumber the original radish-bed till Michaelmas, select a few of the handsomest, and transplant them into a single row,

eighteen inches apart, with a post at each end, supporting a rail, or tight rope, to which the flowering stems may be tied before they become heavy-laden with pods.

Rhubarb—Rheum, of several species and varieties, whose botanical distinction is not without difficulty.—Some of our garden esculents are of high antiquity; asparagus was a favourite vegetable with Cato; while rhubarb affords the latest instance of the intrusion and establishment of strange herbage in our kitchen gardens. The prospects of this plant are marvellously different from what they were fifty years ago. In speaking of rhubarb, it is impossible to avoid quoting the record Mr. Cuthill has given with such a praiseworthy feeling of respect for a senior brother of the craft.

"Mr. Joseph Myatt, of Deptford, a kind and most benevolent man, now (1850) upwards of seventy years of age [he has since departed this life], was the first to cultivate rhubarb on a large scale. It is now nearly forty years since he sent his two sons to the Borough Market with *five bunches, of which they could only sell three*, so little was the value of this excellent vegetable then known. The other two bunches they brought home with them. The next time they went to market, they took ten bunches with them, all of which were sold. *Coming events cast their shadow before*, and, from the small but increased sale, Mr. Myatt judged, and rightly, that rhubarb would become a favourite. He therefore determined to increase its cultivation, and year after year added to his stock. The demand for it was augmented in an equal ratio. For his first dozen roots he was indebted to his friend Mr. Oldacre, who was then gardener to Sir Joseph Banks. They consisted of a kind imported from Russia, finer and much earlier than the puny variety cultivated by the Brentford growers for Covent Garden.

"It is reported of Mr. Rivers, that when he first began to speculate largely in rose-growing, his old foreman, long since gone to his last resting-place, came one

day with a very grave face, and said, 'Master Tom, you are *surely* out of your mind. What *are* you going to do with all those brambles? It is a shame to plant them on land that would grow standard apples!' So it was with Mr. Myatt and his extensive rhubarb-planting. When one of his sons said in market one day that his father intended to plant an acre next year, they said, 'Your father, poor man, is fast taking leave of his senses.' Like Mr. Rivers and others of a go-ahead turn of mind, Mr. Myatt had to contend against many prejudices; but time, that universal leveller, overcame and broke down every barrier, and rhubarb is now no longer called *physic*, as it was then. In our own day it forms most delicious and wholesome tarts and puddings, as well as an excellent preserve: and as we have sugar and flour so cheap [those, alas, were the good old times!], any system of growing this useful *vegetable fruit-stalk*, as it may be called, earlier and more plentiful during the winter than it is at present, must prove a benefit.

"In the first place, let me premise that there is a wonderful difference in the sorts as to earliness and quality. Myatt's Linnæus and Mitchell's Royal Albert are the earliest and the best flavoured [the Elford, Hybrid, and Victoria are also good]; and wherever any of the rougher sorts exist, they ought to be done away with at once; for there is as much difference between the flavours of rhubarb as between a Ribstone Pippin and a Codling apple. Besides, we want everything early: and as rhubarb is so easy of carriage, what reason can there be why Cornwall and Devon should not furnish it in large quantities, as they now do the London markets with their far-famed white winter broccoli. In these days rhubarb would find a ready market in every town in the kingdom, and there would be no fear of producing too much, provided it could be sold cheap enough. As manure is a principal item in its culture, the supply of this must be duly considered, before the locality is fixed on where it is to be grown (on a large scale), which should be fields contiguous to some line of railway.

Being one of the grossest feeders of any vegetable we have, rhubarb should have plenty of manure; and just in proportion as the latter is well or ill supplied, will the crop be abundant or scanty. The very strongest manures, as cow-dung, night-soil, horse-dung, or sewerage-water, suit it perfectly.

"I mentioned to a London market-gardener one day, that I was of opinion that Cornwall and Devon would ultimately be found to be the great marts for our early rhubarb. His reply was, 'We can beat them hollow.' 'That's well,' said I; 'for the whole of the north of England and Scotland too are ready to receive not only early rhubarb, but everything else. At the present time (April 25th, 1850), there are many tons being sent northwards daily. There is no fear, therefore, of glutting the market.' The Cornwall and Devonshire growers might easily have forced rhubarb all the winter by making trenches five feet broad and one or two hundred yards long, taking up the roots and packing them in the trench, and putting mould upon them. Hurdles covered with straw might be placed over all. Nothing more would be needed; but of course it would require immense quantities of roots to replace those that were forced, which should not be thrown away, but cut into eyes and planted again."

Rhubarb may be grown from seed by those who like to amuse themselves by raising varieties, and have patience to wait for the produce. But for quick returns, roots must be bought of the nurseryman in autumn. Trench deep a rich mellow plot of ground. Soil too stiff, clayey, or wet, must be avoided, unless a *late* crop be the object desired. Plant in rows four feet apart, and four feet from root to root, in quincunx, or alternate, order. Those distances are not one inch too much, if you wish for magnificent specimens. Make a deep hole where each plant is to stand, and into it put a barrowful of rank manure; shovel in a little earth, and on the earth plant the rhubarb, with its crown exactly level with the ground. In the course of next

May you will get stalks worth looking at. It will not be quite so early the first spring after planting as subsequently.

In forcing or forwarding rhubarb, expose it to light and air as much as possible, unless you wish to draw it particularly mild and flavourless. Hence, a coarse osier hamper, bottom upwards, or a chimney-pot open at the top, will produce rhubarb of better quality than more costly expedients. Never *cut* the leaves from the stool; pull them boldly, with a slight twist upwards and inwards, towards the heart of the plant, and they will come away quite naturally. Do not *peel* rhubarb; it should be grown so quickly as not to be tough, and by rejecting the skin you throw away part of the goodness. Rhubarb is but little known in continental gardens. Still, where known, it holds its place.

Rosemary—Rosmarinus officinalis, with gold-striped and silver-striped varieties.—The early season at which it flowers, and its old-established connection with the last rites due to humanity, render this modest aromatic shrub suggestive of touching remembrances. It will not bear severe frost. Cuttings in spring will take root under a hand-light, if properly shaded and watered.

Rue—Ruta graveolens.—An intensely bitter plant, of dull glaucous aspect, long valued as a vermifuge for children, and a domestic medicine for poultry and other small live stock. Typical of sorrow, affliction, and self-abasement. Propagate by cuttings.

Sage—Salvia officinalis—at present seldom answers any higher purpose than to enter into roast ducks, geese, and legs of pork, combined with chopped onions, pepper, salt, and crumbs of bread, in the shape of stuffing. Dried and powdered, it forms an excellent external condiment to the above-mentioned savoury joints. There are the Common Green Sage, the Red Sage, the Variegated Sage (white, red, and green, and very pretty), and the Gold-striped Sage. But the Narrow-leaved Sage, or Sage of Virtue, maintained its high repute for many centuries.

" Cur moriatur homo, cui salvia crescit in horto?"
Why dies the man, whose garden gives him sage?

Herb teas, of various aromatics, are pretty well forgotten; that from the Narrow-leaved Sage must indeed be the "virtuousest, best" panacea on earth. "*All* these infusions," Dr. Darwin dryly observes in his *Phytologia*, "become nutritive, when drunk with cream and sugar, and have certainly contributed to the health of the inhabitants of this island by decreasing the potation of fermented or spirituous liquors; and to their morality, by more frequently mixing the ladies and gentlemen in the same society." Propagate sage by cuttings, under shade and glass; or by layers; or by division of the roots, or the naturally rooted branches.

Samphire—Crithmum maritimum.—Unfortunately a rare plant in modern gardens. Wild, it mostly grows on spots that are not accessible without fearful risk of life. Every Englishman is acquainted with "one that gathers samphire" half-way down the face of Dover cliff; but how many of our readers know the taste of the produce of that "dreadful trade?" The samphire business nowadays must be a small concern. One or two species of Glasswort are sold and pickled in Norfolk and elsewhere, both in England and on the Continent, by the style and title of Samphire or Passe-pierre (which some will have Perce-pierre), but are as false a substitution as was the fair maid who listed "under the name of Richard Carr." The pickled *Salicornias* taste of nothing but the vinegar and the spices, and altogether differ from that classic umbellifer the *Crithmum maritimum*. "Not only pickled," says Evelyn, "but crude and cold, when young and tender (and such as we may cultivate and have in our kitchen-gardens almost the year round), it is, in my opinion, for its aromatic and other excellent vertues and effects against the spleen, cleansing the passages, sharp'ning appetite, &c., so far preferable to most of our hotter herbs and sallet ingredients, that I have often wondered it has not been long since propagated in the potagere, as it is in France, from

whence I have frequently receiv'd the seeds, which have prosper'd better and more kindly with me than what comes from our own coasts. It does not indeed pickle so well, as being of a more tender stalk and leaf, but, in all other respects, for composing sallets it has nothing like it." True samphire is not of easy culture. Chalk and salt are the elements which it seems most to affect. The only wild *habitat* the writer knows, which can be got at without almost certainty of breaking one's neck, is at the foot of a cliff near the ruins of Tankerville Castle, on the banks of the Seine.

Savory—Saturcia montana.—Winter savory is a hardy, low-growing under-shrub, with dark-green narrow leaves and white flowers, pleasantly though feebly aromatic. It is a good bee-plant, and serves well for an edging or miniature hedge in warm aspects. Propagate by seeds, cuttings, or division of the root. Summer savory, *S. hortensis*, is an annual plant, and must therefore always be raised from seed.

Stramonium—Datura stramonium.—An annual white-flowered species of a very handsome genus: seeds freely. The leaves of stramonium are dried and smoked as tobacco, for the relief of asthma. But it is a dangerous plant; taken into the stomach, it causes long-continued madness, and sometimes death.

Tansy—Tanacetum vulgare.—Tansy-pudding retains its place in old cookery-books. Few persons will regret its remaining therein instead of appearing in proper person on the table, if the dish partakes strongly of the peculiar and powerful odour of the plant. It may be of more value as a vermifuge than as a dainty. Spreads at the root so rapidly, as soon to become a weed and a nuisance.

Tarragon—Artemisia dracunculus.—Tarragon vinegar, pickled tarragon leaves, and sometimes the fresh green leaves in salad, are ingredients of so decided a character as to be powerful agents in the hands of a skilful and judicious cook. The plant, of somewhat slender and elegant habits, is perennial; and though a native of

Siberia, requires protection during sharp weather. Like other plants that may be regarded as "alpine," whether in respect to latitude or elevation, it is somewhat tender when not protected in winter by its native covering of deep snow. Propagate by cuttings or division of the root. Requires light, dry, warm soil.

Thyme—Thymus, vulgaris and *citriodorus,* common or Garden Thyme and Lemon Thyme, are the two species usually cultivated as sweet herbs, although the whole genus are available as pleasant and useful aromatics. Some of them are exceedingly pretty rock plants. The tender leaves minced, or dried and powdered, serve to flavour stuffings and ragouts. The supply required for market is considerable. Thyme is supposed to partake, in a less degree, of the medicinal virtues attributed to sage. It may be made to serve as an edging, or border-plant. Is most readily propagated by division of the stools in spring; but may also be raised both from cuttings and seed.

The Tomato, or *Love-Apple—Solanum lycopersicum.*—In the south of Europe, tomatoes are subjected to field culture, and are brought to market by cart-loads. Here the plant must be treated as a tender annual, raised from seed in a hotbed, like cucumbers and egg-plants, pricked out in pots, gradually hardened by exposure to air and sunshine, and planted, at the end of May, at the foot of a south wall, against which it must be trained like a peach or apricot tree. The shortness of our summer causes the great difficulty in tomato-growing; fruit is more easily formed than ripened. The best plan, therefore, is to prevent its undue formation, and to throw the whole strength of the plant into a few of the first bunches of blossoms which open, by removing all unnecessary laterals, and stopping the leading shoots a joint or two above a cluster of fruit. Without careful attention to this, the tomato crop will be scanty or null. A slight touch of frost injures the fruit as well as the foliage; it must therefore be gathered and stored indoors in good time. But even if quite green when removed

from the plant, it will often ripen and assume its perfect colour, if exposed to the sun and laid in a warm place, though the flavour will be slightly inferior to those ripened in the open air. Thus, the tomato season may be considerably prolonged. Green unripe tomatoes make a good pickle, though of too watery a nature to keep long. Various receipts are current for making tomato sauce; but the ripe fruit simply boiled in good stock gravy five or six minutes, and dished up whole, makes a handsome and palatable addition to a dinner, when such a supplement is suddenly required. There are several varieties of tomato, with large, small, round, red, yellow, and wrinkled or swollen fruit. There is scarcely any, if any, difference in the flavour. The large red is the kind to prefer. In autumn, remove those leaves which hang so as to shade the fruit. In France, tomatoes are forced on a large scale, and grown under bell-glasses, till the weather admits of their exposure to the open air. During the early stages of growth, administer plenty of water and liquid manure. As soon as there is a sufficiency of full-grown fruit, starve the plant to assist the ripening process.

Woodruff—Asperula odorata.—The sweet-scented woodruff, whose faded leaves give out a scent like new-mown hay, is a charming little white-flowered sylvan plant, which grows well in the shade or northern aspects. The perennial roots bear division well. In France, bunches of woodruff are used, like lavender, to perfume drawers of linen. On the Rhine, the young spring shoots are thrown into tankards of wine.

Wormwood—Artemisia absynthium.—A perennial, bitter, aromatic plant, a noted tonic and vermifuge. The green shoots put in beds are said to drive away fleas. In Italy, the plant is mixed with the grapes, to make the bitter wine thence called *vermute*. *Absinthe* is a liqueur obtained from it by distillation. Wormwood gives its flavour to the "purl" of the English workman. Propagate best by dividing the root.

The Apple—Pyrus malus, of very numerous varieties.—A well-grown apple-tree is a beautiful object. Twice a year, in blossom and in fruit, it attracts the eye to admire its elegant and rich display. Apple-trees are grown under three conditions; as standards, as espaliers, and as dwarfs. As standards, they occupy too much room, except in the largest kitchen garden, and therefore take their place in the orchard by themselves. Espaliers have many advantages; they are low, convenient to gather, the fruit is not so liable to be blown off by high winds, but ripens well from its larger share of shelter and heat, and the crop is usually large in proportion to the space occupied. Dwarf apple-trees are little known in England; but, like the pyramidal pear-trees, they will make their way, and maintain it. On the continent, dwarfs (many so small that they bear fruit in pots) are in high esteem. They are trained either as pyramids, like the pear-trees, or the branches are made to form a sort of bowl, being held in their places by osier-hoops until the tree is perfectly formed. Both espaliers and dwarfs require considerably more attention than standards, which are pretty nearly left to themselves; they must be pruned and looked over twice at least during the season. In private gardens, the small space they occupy allows the great advantage of cultivating a numerous variety of apples. A family does not want an immense crop of one kind only, which lasts its time during the season, and then is over; it is much better to have a constant succession of crops which, though small in quantity, come conveniently one after the other. Both apples and pears like a hypercarbonated atmosphere; they stand the smoke of cities better than most other trees; in fact, it suits them. In many provincial towns in England, the pear-trees, especially within the walls or limits, are finer than those in the suburbs and the neighbouring open country. Dwarf apple and pear trees are therefore particularly adapted for town

gardens. The apple is not nice about the soil in which it grows; a light mellow well-drained loam is the best; but it thrives fairly in any soil which, without being absolutely sterile, is poor, and also on stiff heavy lands, if they are not poisoned by subsoil water. The roots of the apple are more inclined to run along the surface than those of the pear, which likes to send down a tap-root; the apple is also less greedy of manure.

Apples may be propagated by cuttings, although there is a considerable difference in the facility with which they take root. The codlings strike most readily. Apples may be raised from seed or pips; but the produce is so uncertain, and the pips from a good apple so frequently produce a bad one, that seedling apple-trees are only grown for the sake either of experiment or for grafting upon. What are called Paradise stocks, are suckers planted out in the nursery for grafting. All nurserymen keep collections of young ready-grafted or *worked* trees; the readiest way, therefore, to furnish a garden, is to plant in autumn trees from the nursery that have been selected during the previous summer. Prefer plants from a nursery whose soil is similar to that of your garden or orchard. Open the holes where the trees are to stand several months before planting, especially if you are making a new garden on unbroken ground. Let the holes be made broad rather than deep; for, as a general rule, it is better that the roots of fruit-trees should keep near the surface than plunge into the subsoil. Take great care not to plant too deep. The young tree of course will be supported by one or more stakes. It is not a bad plan to plant fruit-trees on the level of the earth, and to cover the roots with a little hillock of mould four or five inches high. Transplanted trees should have the same bearings, with regard to the points of the compass, in their new as in their old site. Therefore, when selecting them, mark the side exposed to the north by a dab of paint or whitewash on the bark. The sooner a tree, once out of the ground, gets into it again, the better. Avoid all tearing of the roots, bruising the

bark, and crushing the twigs. It is time well bestowed to go to the nursery and superintend the taking up of the trees *yourself*. Damp weather is better than dry; sharp frosts and cutting spring winds are fatal. Remember the proverb, "Plant trees in autumn, and *command* them to grow; plant in spring, and *beg* them to grow." And in planting, as much as anything, "Well begun, is half-done."

Though ready-worked fruit-trees of almost every variety may easily be had of the best Scotch and English nurserymen, the amateur, as well as the professional gardener, ought to be able to perform himself the operations of budding and grafting. It is a useful and amusing accomplishment, which no active-minded person will ever regret having acquired, but whose advantage will often prove itself in various unexpected and agreeable ways. Grafting is less easily taught by written directions, than budding; clear details are given in Paxton's "Cottager's Gardener," p. 10. Budding we propose to describe in our forthcoming book, "The Flower Garden." Both are best learned by seeing the operation performed, and then attempting it immediately afterwards. The reader is strongly advised to take lessons in grafting and budding.

Good Standard Apples.—Applejohn and Geniting, among the earliest; Hawthornden, handsome, comes into early bearing, abundant; French Codling; Keswick Codling; Early Margaret; Kentish Fill-basket; White Colville; Peach Apple; Dr. Harvey; Aromatic Russet; Golden Lustre; Yorkshire Greening; London Pippin; Hollow-crowned Pippin; Canterbury Pippin; White or Stone Pippin; Wheeler's Russet; Norfolk Biffin; Striped Biffin; Manks Codlin; Reinette de Canada, French Apple, keeps till May; Queen's Codling, delicate and beautiful as if modelled in wax; King of the Pippins; Kerry Pippin; Adams's Pearmain; Dutch Mignonne.

Good apples for Espaliers.—Court of Wick Pippin; Cat's Head, very large; Ribstone Pippin; Brandy Apple;

Paradise Pippin; Wormsley Pippin, one of Knight's raising; Newtown Pippin, famous American apple; Emperor Alexander; Margil; Scarlet Nonpareil; Golden Pippin; Golden Russet.

For dwarf apples, send to France. They are cheap pretty little plants, to bear as soon as their roots are established; may be had from tenpence each upwards. The amateur who can afford the time and money will derive instruction from a horticultural tour in the north of France and Belgium.

Dessert apples and kitchen apples can hardly be distinguished; in the first place, because *Knife Apples*, as the French call them, are equally good in puddings and tarts; and secondly, because, as the season advances, many hard kitchen apples, such as the London Pippin, and even the Norfolk Biffin, become sweet, mellow, and presentable at dessert. In fact, all late-keeping dessert apples are only kitchen apples at the beginning of winter. Paxton's directions for keeping such are excellent. "Get some fine pit-sand and heat it hot, to dry it and destroy any vegetable remains it may contain. Then procure some large jars or garden-pots, put a little sand when cool in the bottom, and then a layer of fruit, barely touching each other, filling up between them with the sand, until the vessels are full, when they may be placed in the bottom of a cupboard, or any other place where they will be safe from frost and kept dry. The best and most perfect fruit should be selected for this purpose, which may be ascertained after they have been gathered a short time. Any choice or late-keeping kind for exhibition should be preserved in this manner."

Apricot—Prunus Armeniaca.—Apricot-trees in England are almost invariably trained against a wall. In a few favoured southern localities, standard apricots are a possibility; but the collective number of such in all Great Britain and Ireland does not amount to a high figure. The early blossoming of the tree, before the leaves have expanded to afford a little protection, exposes

the embryo fruit to the attacks of spring frost. Various modes of sheltering have been devised, by nets of twine or woollen yarn, screens of fir-branches or planks, cucumber-lights set leaning against them, &c., &c.; but many gardeners, after having tried these expedients one after the other, have arrived at the conclusion that as good a plan as any is to leave the trees uncovered to take their chance.

Good kinds are, the Anson, or Moorpark, of which there are said to be several sub-varieties, but it may be suspected that they differ mainly in name; at least, the old sort is not beaten yet. The Turkey Apricot, a good, hardy, strong-growing sort. The Orange, the best for preserving. The Breda, a great bearer, but somewhat dry and mealy in quality; in very sheltered southern nooks, this is the kind to try as a standard, producing, if it succeeds in that way, a crop of fruit which is valuable from coming in after the wall-fruit is done. The Algiers apricot is an old sort, but seems only to be the Brussels under another name. Rivers's (of Sawbridgeworth) *small* list of fruits, comprises some new varieties of apricots.

The apricot may be propagated by planting the kernel, which, if it come from a good fruit itself, is likely to produce good fruit also. The plan is worth adopting, partially, at least, by those who are not impatient to reap the produce; and if the seedling does not turn out satisfactorily, it can always be budded afterwards. Apricot-trees are liable to die off; and both young and old ones are apt, at times, to lose whole limbs or branches without any obvious cause, or any real decay in the trees. Much has been said and written on this subject—by Knight amongst the rest—without any great result having been attained. The evil, unfortunately, still continues, even under the best treatment. Stone-fruit-trees are almost always budded instead of being grafted, the larger wound inflicted by grafting often causing the trees to exude gum for some time afterwards, and to weaken them permanently. Apricots are mostly

budded on plum-stocks; but Knight advised budding them on seedling apricot-stocks instead, as forming a a more natural union; and he found that it prevented his Moorpark trees from becoming diseased, debilitated, and short-lived, which they so frequently do on plum-stocks. Seedling apricots, when their fruit turns out good, are therefore particularly valuable, as they are exempt from at least one cause of failure. Perhaps our severe winters may have something to do with the death of entire branches; without completely explaining the phenomenon, we may believe them to be frost-bitten in a climate so much less genial than their native home: and, unfortunately, apricots do not thrive well or force under glass. The thinnings of the young green fruit, before the kernels are formed, make delicious tarts.

Disbudding, summer pruning both with the knife and the finger and thumb, and winter pruning, are operations which must be learned practically. Lessons must be taken from experienced and judicious practitioners; for not a few gardeners prune so injudiciously that you would say they were trying to do the tree as much injury as they can. A pruning-knife is no more disgrace to a gentleman's hand than a gun, a dog-whip, a fishing-rod, or a duelling-pistol. In some of the French fruit-growing departments there are public courses of pruning and grafting, at which pupils may follow the horticultural professor, during the season, through nurseries which serve as lecture-rooms of gardening science.

Later-flowering and hardier varieties of apricot are still a desideratum in this country. It is a pity that any seedling should be budded before the quality of its fruit has been tested: no doubt, many valuable sorts have thus been lost to the world; and it is very desirable that those whose opportunities and means allow, should sow more apricot-stones than is usual now. It is very possible that we might thus arrive at a standard apricot suited to the climate of Great Britain; and be it remembered that the ripened fruit of standard apricots and peaches, though smaller, is more finely-flavoured than wall-fruit.

The Cherry—Cerasus—of several species and many varieties.—A tree of handsome stature, when not stunted in its growth by budding, and which furnishes a useful wood which is largely employed in the making of furniture. The double-blossomed cherry (of several varieties), which bears no fruit, is in some request as an ornamental flowering tree. All cherry-trees have gummy sap; the epidermis of their bark stretches horizontally and circularly round the trunk, and is very strong and tough. In some species, the red colour of the leaves in autumn suggests their employment in landscape-gardening, while the *Cerisier de la Toussaint*, a small tree with weeping boughs, flowers for three or four months during the summer, and ripens its fruit in autumn, till the frost puts an end to it.

Cherries do well as standards, dwarfs, and wall-trees. The May Duke is the best common sort for all purposes. The Black Heart is good for a dwarf or standard; the White Heart the same. The Black Eagle, the Elton, Harrison's Heart, and Waterloo, are suitable for an east or west wall. The Black Tartarian, one of the best late cherries, keeps well, possesses all the good qualities of the other black sorts, combined with large size, and will do on an east or west wall. In the southern counties this, and perhaps all the others, may answer as dwarf standards. The Bigarreaux constitute a class of cherries in which formerly only those were included which were two-coloured, *i. e.* of a pale waxy yellow or white on one side, and red on the other; but at present, all the heart-shaped cherries in which the flesh is firm and crisp are ranged under the head of Bigarreaux: they are excellent in quality, but not abundant bearers. The Morello (mostly used for preserving in brandy, though it is very acceptable at dessert, if netted and suffered to hang as long as possible) does well against a north wall, and also makes an elegant dwarf standard. French gardeners say, that the best of all known cherries is the Reine-Hortense, a remarkable variety, raised or brought into notice in 1838 by M. Larose, nurseryman, of Neuilly. The fruit

is very large, bright-red, and excellent in quality, ripening there at the beginning of July. The Black Guigne, common in Scotland, though of French origin (the old connection between France and Scotland is matter of history), is well worth attention; it is hardy, good, and as large as most of the Black Hearts. Some of the small, wild cherries, or *Mérises* (whence, probably, the Merry cherry of Cheshire), are sufficiently sweet and well-flavoured to be acceptable on a hot summer's afternoon: from them are prepared the famous cordials known as kirschwasser and maraschino.

Cherry-trees may be budded at the end of June or beginning of July, according to the state of the buds. In pruning, do not cut short, but thin out the superabundant branches their whole length. The stones of all fruits intended to be sown should be put into damp sand or mould as soon as they are taken out of the fruit. In autumn they can be set where intended to remain.

The Chestnut—Castanea vesca.—One year in ten, or thereabouts, tolerable chestnuts are ripened in England; the tree therefore, which is exceedingly handsome, may be allowed a corner in a spacious orchard. The nuts, sown in autumn, will produce young trees, which may be raised in a nursery till their final planting out. In the south of Europe, chestnuts are grown in large woods on an extensive scale. Wild-boar, self-fattened on chestnuts, makes a dainty variety of game. There are several varieties of the chestnut-tree, in different esteem in different localities. Their study is of little importance to us, who can so seldom reap the produce. The finest trees are produced from the finest nuts, sown where they are to remain, to avoid injuring the tap-root by transplantation; but as chestnuts are a tempting prey to rats and mice, they may be kept sprouting in mould during winter, to be carefully planted out in spring.

The Currant—Ribes album, rubrum, and *nigrum.*—White, red, and black currants, as well as our numerous gooseberries, are fruits whose excellence is owing to our northern position in the temperate zone. In hot dry

climates they do not succeed. Two species of *Ribes*,—the red-blossomed and the yellow-blossomed,—are cultivated as ornamental flowering shrubs. The dried "currants" sold by grocers, and which come from the Levant, are not currants at all, but small grapes, known as *raisins de Corinthe*, and would therefore be more properly called *Corinths*. The white currant is said to be only a variety of the red, the black currant being a distinct species. A pink variety, between the red and the white, is grown rather for curiosity than use. The good varieties of currant are not numerous; the best are,—the White Dutch, the Red Dutch, and the Black Dutch. Seedling currants and gooseberries are mostly of very inferior quality. Knight raised several which are worth growing. Currants are easily propagated by cuttings, which are usually planted in autumn or spring; but by shading and watering they will succeed in summer. They may be bought of nurserymen at such reasonable prices, that it is much better to apply to them,—at least for one's original stock. The most common mode of growth is as standard bushes; trained against a north, west, or east wall, they are conveniently placed for being covered with nets to preserve the fruit late in the season, when they become acceptable additions to the dessert. Currants and gooseberries also make a pretty arbour or covered walk; the ripe fruit, of various colours, hanging down beneath the leaves, has a pleasing effect. Trained to run up with a single stem, they are convenient for ripening the fruit well, for gathering it, and for growing a good many kinds in a small space.

Currants and gooseberries require cultivation like other plants; to have the ground about them hoed, well-cleaned, and manured. Too frequently it seems to be believed that bushes and trees require nothing of the kind. As to pruning, gardeners differ; some think they produce as well and abundantly if suffered to run wild at will. But they make at least a more respectable appearance, if redundant shoots are thinned out from their middle, and all suckers are removed from their root; there can be no

doubt either that the fruit is made finer by stopping the watery shoots at the end of the bearing twigs. Cutting out all unnecessary wood will give air and assist to ripen. As a general rule, in winter-pruning gooseberries and currants, thin out rather than shorten the branches. It will do no harm to transplant young bushes early in December; the removal will tend to throw them into bearing, and give a good opportunity for the removal of suckers clear away from the points whence they threaten to spring. Currants and gooseberries are both called by the same name,—*groseilles*, in French, gooseberries being distinguished as *grosses groseilles*, big currants, or *groseilles à maquereau*, mackarel currants.

The Fig—Ficus carica.—A tree endowed with great tenacity of life, which, after being maimed, ill-treated, frost-bitten, or burnt, will spring up again from the crown of the root even years after it has been supposed quite dead. And yet, owing to the tenderness of its terminal shoots, and its peculiar mode of bearing, a good crop of figs in England requires some management to obtain. For the same reason, the fig does best near the sea, where frost is never so severe as inland. The fig bears a certain amount of shade, produces in quite an early stage of growth, and consequently in a dwarf state. Hence, persons who are fond of the fresh ripe fruit may cultivate fig-bushes in the pit of a vinery, in pots, or even in a glass-passage which enjoys a moderate amount of sunshine in summer and shelter in winter, as well as their ordinary fig-trees trained against a south wall. In the south of Europe the fig-tree bears two crops of fruit during the summer: the first, growing on the midsummer shoots of the previous year, and which is the only crop that ripens out-doors in England, in consequence of the shortness of our summers; and the second, on the spring shoots of the same year, which constitute the numerous little figs which we see pinched and destroyed by the autumnal frosts in almost every English garden. To have figs, therefore, it is necessary to protect effectually the tips of the twigs of the current year, the difficulty of

which is increased by their being mostly but imperfectly ripened. One way is, to unfasten the branches from their wall, and tie them together in convenient bundles, wrapping straw or hay-bands round them. When danger of frost is over in spring, the branches will be uncovered, and replaced in their former positions; if, however, the winter is open and mild, it will be well to open them from time to time, to see that there is no mould or rottenness, leaving them exposed to the sun and air, and carefully repacking them in their straw-bands before nightfall.

In the southern counties the fig will do as a bushy standard, and also as an espalier, in which latter position a winter covering may be applied to it with little difficulty. In the kitchen garden of the Palace of Versailles, figs are grown on bushes from a yard to seven feet high. In autumn, the branches are all bent to the ground, tied up in bundles, and held down with strong hooks fixed in the ground. Litter is then thrown over them, and increased in quantity as the frost becomes more severe. This is an excellent mode of protection; the only difficulty belonging to it is that the branches must not be too stiff and thick, nor exceeding the length above mentioned. But those conditions are easily attainable. At Argenteuil, a village near Paris famous for its fig-grounds, to save the expense and trouble of straw and litter, the branches are bent down, laid into furrows, kept there with hooks, and covered with earth. In this position they remain all the winter; at the end of March they are again allowed to receive the influence of light and air. The fig deserves a little extra winter care, as our summers are mostly warm enough to ripen it.

Fig-trees bleed when cut, and are considered to do best without pruning. A system, however, has been recommended which increases the proportion which the midsummer shoots (the only ones that produce fruit which ripens in this country) bear to the spring shoots, both in number and length. For this purpose, the

spring shoots are broken off as they nearly attain their full growth, and just as the spring sap in each begins to abate something of its full vigour. They must be broken at moderate distances (from six to fifteen inches, according to the strength of each shoot) from the place where they severally spring, taking care that enough of the shoot be left to admit of its being bent back and nailed close to the wall, and that one eye at least be left uninjured by the fracture, and always preserving a quantity unbroken sufficient to keep up a future supply of branches and wood. The shoot may be either broken short off, or left suspended by a few ragged fragments, which may afterwards be separated with a knife, when the spring sap has ceased to flow. The former mode is less unsightly, and will therefore be generally preferred by the gardener; but the latter has been found more successful in practice.

The best figs for the English climate are the Brunswick, the Brown Turkey, the Large Purple, and the Brown Ischia. The Marseilles and Nerii, delicious varieties, require more heat than usually falls to their lot with us. In the south, the varieties of good figs are very numerous. Best propagated by layers and suckers.

The Filbert—Corylus Avellana.—Hazel-nuts, in their varieties, resemble cucumbers and gourds in being monœcious plants; that is, the male and female organs of fructification are produced in distinct and separate flowers, although growing on the same plant. In hazels, the former are the pendant tail-like flowers which appear in early spring, before the leaves are open; the latter are much smaller, consisting of a pencil of bright crimson filaments. The use of the knowledge of this fact is, that when the male blossoms are unduly scanty, little or no fruit will be produced on filbert-bushes; but the deficiency may be remedied by hanging amongst them branches of the wild hazel abounding in catkins. For convenience, filberts may be pruned to form low bushes, with open bowl-shaped heads; but they are

handsomer suffered to grow at will. The best and most fruit will be produced at the top, and will be out of the reach of boyish depredators. The White Filbert and the Great Cob-nut are the choicest varieties. For late use, filberts may be preserved fresh by packing in dry sand. Propagate by suckers or layers to make sure of the kind you wish for; sow nuts, if you are fond of experiment. The Variegated and the Purple Hazels are ornamental shrubs in some esteem.

The Gooseberry—Ribes grossularia.—An excellent and popular fruit, whose varieties have been greatly increased by the Lancashire gooseberry shows, where the berries are exhibited for prizes, *size* and *weight* being the leading elements of success. It must be confessed that many of the new sorts are inferior in flavour, when ripe, to the old ones, however well they may serve in a green state in tarts or as sauce for mackarel. There are green, yellow, and red gooseberries, in smooth and rough varieties. Their propagation, by cuttings, is the same as that of currants; but as they are even more apt to throw up suckers, it is a good plan, as a preventive, to cut out the lowest buds of the cutting. In gathering unripe gooseberries for tarts, do not take all you want from one bush, but thin the fruit from several bushes. The Lancashire exhibitors (whose rules, practices, and records would fill a small volume that would not be uninteresting) leave but very few on each bush, and increase the size of those by mulching with manure, and also by a process called "suckling," *i. e.*, placing a pan of water under each berry, that it may swell from the vapour given out. The greatest enemy of the gooseberry is the black and white moth, whose caterpillars sometimes strip a bush entirely of its leaves, and consequently ruin the fruit of that season, besides weakening the plant for the next. Every moth should be caught and destroyed; the same of the chrysalids. Whenever the caterpillars appear, they must be handpicked and thrown into boiling water, to prevent the spread of the mischief. Those who wish for enormous gooseberries should pro-

cure their plants from the best Lancashire growers; new sorts are sent out almost every year. Good varieties in point of flavour are the Rough Red, the Red Champagne, the Yellow Champagne, Pitmason's Green Gage, the Warrington Red, Miller's Crown-bob, the Yellow Rumbullion, and the Late Green.

The Grape-vine—Vitis vinifera.—Unfortunately there are but few varieties of this noble plant which ripen well, out-doors, in England; and they are often grown as if the object of the gardener was the leaves for salad, rather than fruit for dessert. Here, vines scarcely succeed as epaliers or low bushes; perhaps something might be done if out-door horticulturists would study the practice of the French growers who cultivate the vine both for wine-making and for table use. Still, in the greater part of England, the vine must have a south wall. Eligible kinds are, the White Muscadine, Miller's Burgundy, the Black Cluster, the Black Sweetwater, Esperione, the Grove End Sweetwater, the White Sweetwater. The Cut-leaved or Parsley-leaved Muscadine is grown rather for its singular foliage than for the grapes obtained from it.

As general rules to be observed with out-door grapes, prune as soon as possible after the severe frosts of January, if it has not been done in autumn; otherwise, your vine will be apt to bleed; if through accident or idleness you have neglected it till April or May, let it remain as it is till the bunches of flowers appear and the shoots are starting vigorously; then remedy the evil by pinching with finger and thumb, without using the knife. Before the blossoms open, stop the shoot on which they grow at the second joint above the future bunch of grapes; this will hasten their formation and ripening by several days, an important point at the approach of October. Grow very little on the border where the vine-roots spread; not for fear of exhausting it, but of shading it. Vine-roots like to be kept warm; therefore, pave the bed at the depth of two feet, if you have a cold sour subsoil. Light shingly soil, permeable to the warm

air, and easily drained, is most suitable. Endeavour to bring your vines into a dwarf stunted habit, after the manner of *properly-managed* pyramidal pears, even by root pruning if necessary. Use no rank manures; dressings of leaf mould, mellow loam from pastures, and calcareous earths will be sufficient. In our humid climate, the vine absorbs a great deal of nutriment from the atmosphere; each of its leaves acts as a sucker. The more luxuriant a vine is, the slower it will ripen what fruit it bears; and ripening slowly often results in not ripening at all. Garden vines are mostly over-fed; it is hardly possible to be otherwise. During summer, look carefully over your vines at least once a week, and use all your art to throw the vigour of the plant into the fruit, of course taking care to leave as much foliage as is necessary for the due performance of the functions proper to the leaf. Tying grapes in muslin bags assists their ripening, saves them from wasps and flies, and protects them from slight early frosts; the pity is, that the taking them off spoils the bloom. Give the young wood every opportunity to ripen before winter. Keep always as close to the wall as you can.

The stones of grapes, if sown, give very uncertain produce; and you have to wait eight or ten years before you can ascertain whether it is bad or good. Nurserymen mostly propagate vines from cuttings; if you have the opportunity, get a friend to layer you a branch any time during the winter. It may be removed the following autumn, and will, perhaps, bear fruit the next summer. The best mode of training is to lead the permanent branches along the wall in a horizontal direction right and left. Thinning the berries, when about the size of peas, with a pair of sharp-pointed scissors, not only makes those which are left finer, but assists their ripening by the admission of warm air and reflected heat and light. Out-door vine-growers should study the mode pursued, to obtain dessert-fruit, at Thomery, near Fontainbleau. There is no room even to give a sketch of it here.

The Medlar—Mespilus Germanica.—A tree of remarkable, and even ornamental aspect, from its tendency to an umbrella form, its large white flowers, and its handsome lanceolate foliage. There can hardly be said to be more than two kinds in cultivation; the Dutch Medlar, handsome to look at, indifferent to eat, the largest variety; and the Common or Small Medlar, by far the best on the table. Medlars are, in general, propagated by grafting on a hawthorn stock; but the union between the scion and the stem, even after many years' growth, is so imperfect, that the head of a medlar-tree is not unfrequently entirely carried away by a high gale. A sheltered situation is therefore indispensable to security. But Miller observes, that if the stones are taken out of the fruit *as soon as it is ripe*, and *immediately* planted, they will come up next spring, and make good plants in two years. He prefers raising from seed to grafting on the hawthorn. The seeds, however, ordinarily lie two years in the ground before they come up. Certainly, it would be a good thing if seedling medlars, instead of grafted ones, were more readily obtained at nurseries than they are, even if a higher price were asked for them: the probable smallness of the fruit would be counterbalanced by its superior quality, besides the advantage of having no fears that the first south-west storm would decapitate your tree. Ripe medlars are in old esteem as a harmless nursery medicine. Pruning does more harm than good.

The Garden Mulberry.—This and the walnut are the most prudent of our fruit-trees, as they do not put forth their leaves till all danger of frost is over. They might almost serve as gardening guides. The tree grows slowly, is mostly propagated by layers, and it is better to purchase it of a nurseryman. It is not every summer that the fruit ripens with us. Immediately it is ripe, it drops to the ground. On this account it is usual to plant mulberry-trees on, or to surround them with, a patch of close-shorn grass, at least as far as the branches reach. From this the fallen fruit may be gathered clean

and uninjured, and it is said that that which drops is the best. For families with whom mulberries are a favourite dessert, a tree may be grown against a wall to insure early ripening, and also a succession, if the standards ripen too. In this way it will occupy considerable space; the branches should be trained horizontally. Some manure will be well bestowed upon it. Do not give away *too many* leaves to your neighbours' children who amuse themselves by rearing silkworms. Silkworm mulberry-trees in Italy are with great difficulty kept alive. Standards will require no pruning; wall-trees only so much as will retain them in shape, and at the same time keep up a succession of new wood.

The Nectarine is only a smooth-skinned variety of peach; the natural history and culture of both are the same. There are instances on record of both fruits growing on the same tree, and even on the same branch. Although the peach is so common in France, the nectarine, there called *brugnon*, is rarer even than in England: the chances and caprices of popular taste can be the only cause of this circumstance. Good Nectarines are—Elruge, a good old sort; Red Roman, a well-known fruit; New White, excellent; the Violette Hâtive; and Newington Early. Temple's Nectarine is highly-flavoured.

The Peach—Amygdalus Persica.—Good sorts for England, all meriting and most requiring a full south wall. the Early Anne, small, but amongst the first to ripen; Chancellor; Red Magdalen, good, but tender, and liable to mildew; Vanguard, excellent; Late Admirable, the best late sort, vigorous tree, with very large round fruit of a light yellow, mixed with a little bright red on the sunny side, grown in France as a standard under the name of Belle de Vitry; Grimwood's Royal George; Royal Kingston; Royal George; Old Newington; Galande, or Bellegarde, an excellent old sort, vigorous and productive tree, resists frost better and is injured by rain much less than other sorts, with middle-sized fruit, so highly coloured as to be almost black when perfectly ripe; Grosse Mignonne, with large round fruit, flattened

and even hollow at the top, with yellow skin, dark red on the sunny side, flesh melting, and easily parts from the stone; Noblesse, one of our best sorts, being rather hardy, and doing well on a south-east or west wall. Among peach curiosities, there is the white-flowered peach, introduced from America about 1834, the fruit of which is also white and of tolerable quality; and the semi-double-blossomed peach, worth cultivation for the size and beauty of its flowers, which are succeeded by excellent and abundant fruit.

Many more good peaches might be added to the above list, though it would be difficult to guarantee that they should not be, in great part, the same sorts under different names. The truth is, that nurserymen, and many amateurs even, feel proud of claiming a good variety as their "seedling," raised by themselves. Now, seedling peaches in general produce very good fruit, especially if care is taken to sow only the kernels of first-rate specimens of the best kinds, such as the Red Magdalen, the Late Admirable, and the Grosse Mignonne. When, therefore, people can wait for the produce a year or two later, and are not bound to named sorts warranted exactly true to their kind, it is worth while raising peach-trees from stones. It is a pity to bud seedling peaches till they have been first permitted to bear fruit. Nurserymen are obliged to bud, to insure the kinds their customers ask for. The hard-shelled sweet almond is the best stock for peaches in general; but in shallow or wet soils it is better to bud on plum stocks, such as damsons, St. Juliens, &c., whose roots, keeping near the surface, remain permanently in a stratum of earth, which offers fewer difficulties to drain and manure. Mulching, or throwing a coat of manure over the roots of peaches and apricots, and even pears, at the approach of winter, saves them from the effect of severe black frosts. To raise peaches from stones, immediately the fruit is eaten put the stones into a flower-pot, with a stratum of garden mould at the bottom; lay a bed of peach-stones and mould alternately, till the pot is full; keep them thus

through the winter; in March or April plant them out carefully in the nursery. Stone-fruit trees in general, and the peach in particular, do not thrive well in soils that are deficient in calcareous elements, particularly sulphate of lime, or gypsum; it should therefore be added where it does not abound. The village of Montreuil-aux-Pêches, near Paris, so justly renowned for the excellence of its peaches and the skill with which they are cultivated, is in some degree indebted for its reputation to the strong dose of sulphate of lime which its soil contains,—so much that numerous quarries of plaster-of-Paris are worked there.

The grand principle of pruning peach-trees is to make them throw out a succession of young wood, and to keep the lower part of the tree from becoming naked. Although there is but slight analogy between the fruits borne by the vine and the peach-trees, their mode of bearing is remarkably similar. Both, left to themselves, direct the whole force of their sap to the extremity of their boughs; each twig bears fruit only once, and therefore the object of pruning both is to compel them to put forth a continued annual succession of fruit-bearing shoots. The peach-tree in full vigour always shoots, on its one or two-year old branches, a number of buds which are unnecessary, whatever mode of training be adopted. These must be suppressed at an early stage by the important but simple operation of disbudding. Horticulturalists contrive to class peaches by the absence or presence of several characteristics; thus, there are Melters and Cling Stones, large-flowered and small-flowered varieties; and the leaves are either glandless, with globose glands, or with kidney-shaped glands.

The Pear Tree—Pyrus communis.—The pear is grown as a standard, an espalier, a wall-tree, and a dwarf or pyramidal. In the first state, it attains great age, forms a handsome tree, and furnishes a useful wood. In the last form, it is exceedingly convenient in small gardens; a collection of pyramidal pears may be made to occupy no more room than so many gooseberry-bushes. These

are mostly grafted on quince stocks; they are comparatively new to this country, having been introduced from France. Mr. Rivers has written an excellent treatise on their peculiar management, root-pruning, &c., which the reader will do well to consult. Pyramidal pear-trees in England are almost always spoiled by being allowed to become too luxuriant. The produce of pear-pips is at least as uncertain as that of apple-pips; good kinds are insured by grafting.

Standard Pears: Catillac, Green Chisel, Swan's Egg, Knight's Monarch, Williams's Bon Chrétien, Beurré Capriomont, Knight's Belmont, Aston Town, Muirford Egg, Dutch Bergamot, Swarmer, Van Mons's Leon le Clerk, Winter Crassanne, Hacon's Incomparable.

Pears for Espaliers: Seckel, Beurré d'Amanlis, Beurré Rose, Marie Louise, Suffolk Thorn, Duchesse d'Angoulême, Beurré Diel, Citron des Carmes, Gansel's Bergamot, Passe Colmar, Glout Morceau, largely grown in France as Beurré d'Hardempont; Easter Beurré, Forelle, Grey Doyenné.

Wall Pears: Napoleon, Beurré Rance, Chaumontelle, Winter Nelis, Louise Bonne, of Jersey; Jargonelle, Beurré Spence, Ne Plus Meuris, Brown Beurré, Uvedale St. Germains.

Pyramidal Pears: Roi d'Eté, Bellissime d'Hiver, Belle de Bruxelles, Frangipane; Doyenné Blanc, or Saint-Michel; Bon Chrétien d'Eté; and many others. New varieties are constantly appearing in the market, whose distinctness it is impossible to guarantee. The Belgian pears raised by Van Mons are mostly excellent. Good stewing-pears are the Catillac, Black Worcester, and Uvedale St. Germains.

Standard pears are in general allowed to run as they please; they do run, forming wood instead of fruit-buds. Hence the saying, "Plant pears, plant for your heirs." But wall-trees, and pyramidal dwarfs especially, come into early bearing if judiciously pruned both root and branch. The Winter Nelis is excellent in this respect, independent of the beauty of its shining foliage. Trained

pears should have both summer and winter pruning; at the former, all unnecessary spring growth, not required to be railed in, should be cut back to two or three eyes, to help the formation of fruiting spurs. Winter pruning should be principally directed to the maintenance of due equilibrium between the roots and the branches. On this depend the two great points, the healthiness of the tree and its fruitfulness.

The Plum-tree—Prunus domestica, in many varieties. —The best kinds are insured by budding; while the commoner sorts, such as the bullace, damson, and the coarse harvest plums, are propagated by suckers. All plums will do as standards, in sheltered situations, in England; but several well deserve a wall. The same kinds may also be grown as standards for the sake of a succession. Good Wall Plums are—the Green Gage; the early Orleans; the Washington, fine handsome fruit, not sufficiently known; Coe's Golden Drop; Reine Claude Violette, or Purple Gage; Red Magnum Bonum; White Magnum Bonum; and the Blue Impératrice, which should be allowed to hang on the tree till it shrivels. Besides these, the orchard may contain the Jaune Hâtive, for its earliness; the Blue Perdrigon; Kirke's Plum; and the little Mirabelle, one of the best for preserving either in sugar or in brandy. [Note: The justly celebrated Orleans Plum varies greatly in quality. If possible, taste the fruit of the tree from which the plants you purchase are budded. The same of the Green Gage.] A simple and effectual way of protecting plums, apricots, and peaches from wasps and flies, is to wrap each fruit separately in coarse tow, or wool if to be had. With the finer kinds of wall-fruit, it is well worth the trouble, in situations (near water, for instance) that are much infested by those insect pests. Beer and sugar, in open-mouthed bottles, is a more attractive trap than mere sugar and water. A spoonful of gin increases its efficacy.

The Quince—Pyrus Cydonia.—An ornamental, low-growing tree, of spreading habit, with large pinky-white

flowers, thriving best in damp situations, generally propagated by layers. The Portugal Quince is the best of the few varieties. Quince marmalade is scarcely appreciated so highly as it ought. The fruit abounds in mucilage, and in that respect is a nutritious emollient. The boiled pips make the glutinous preparation called *bandoline*, for dressing ladies' hair. The addition of preserved quince to apple tart improves the flavour.

To make quince marmalade:—Let the fruit hang on the tree till one falls to the ground; then gather the crop. Pare, quarter, and core them; but scrupulously save every pip. The glutinous properties of quince-pips may be perceived by taking one into the mouth and chewing it, when it will make the lips stick together, as a piece of gum-arabic would. Put the quinces with the pips into a stew-pan; add to them a strong ready-boiled syrup of sugar and water, the sugar being equal in weight to the quinces. Continue stirring the whole mess while it boils. When the fruit becomes tender, break and mash it well with a spoon. In about an hour from the commencement of the operation, it will be enough. It may then be turned out into preserve-jars; a portion should be put into shapes, to be used at dessert in the same way as bullace and damson cheese. The next morning it ought to be perfectly stiff and gelatinous, from the strong mucilage of the pips having been thoroughly incorporated with the whole mass. If tied down the usual way, it will keep good for a long time.

The Raspberry—Rubus idæus.—The best sorts are, the Red Antwerp, the Fastolf, the Yellow Antwerp, and the Double-bearing or Siberian. The Raspberry likes a damp situation. Its growth is somewhat peculiar; every year it shoots up stems, called *canes*, which bear fruit the succeeding summer only. It does not like to remain too long on the same ground, as is evinced by its tendency to run to a distance, mole-like, by means of underground stems. It is by means of these sucker-shoots that the raspberry is propagated. They are best planted in rows, close together; *i. e.*, the stools need not

be more than a foot distant; but the rows ought to be not less than six feet apart if possible. Low crops may thus be grown between them; and the ground close to them can be dug, and manure applied to their roots, as long as they stand. Every summer, as soon as the last dish of fruit has been gathered, cut down, close to the stool, every cane on which it has grown. This operation is mostly deferred till winter or even till spring; but it is best performed at once, as it encourages the growth and ripening of the canes that are to bear fruit next year.

Many persons tie them together, bend them down, and so form arches from stool to stool. It is, however, better to open the raspberry-canes fan-wise, and tie them to the length of a horizontal stake, which is supported by a stout post at each end of the row, or even, if very light, by the canes themselves. Gather very gently, or you will be apt to tear off whole bunches of fruit. If early raspberries are desired, they may be obtained by planting a few stools at the foot of a south wall, and training the canes against it. Very late fruit may be had by cutting down stools entirely to the ground in winter, instead of shortening them to the usual length. The new canes thrown up will bear fruit late in the same summer.

The Strawberry—Fragraria vesca.—Within the last half-century, the varieties of this admirable fruit have been greatly increased in number, mainly by the skill of the late Mr. Myatt; others, however, as Mr. Keens, deserve honourable record; and worthy successors are still continuing their efforts by means of scientific hybridization. For new varieties, the strawberry is raised from seed, and that mode is followed only by experimental horticulturists; established sorts are propagated by runners, which the plants send forth in abundance. Select the *first* runners for planting, and mark them by pegging them down. *They* will produce fruit next season; those which come from them, probably not. It has been supposed that the runners exhaust the plant; and it has been advised to cut them off; but the result of experiment is, that the produce is the same, whether the runners are

left or removed. The varieties called Alpine strawberries, bear cooler, damper, and more shady situations, and lighter soil than the others, which prefer a good mellow loam, even inclined to be clayey, such as would be suitable for wheat. The Alpines bear late, their fruit is conical in shape, and has a peculiar aromatic flavour, which is brought out by preserving in sugar. Of the old sorts, the best are, the Bath Scarlet, early, abundant bearer, much sought after for preserving; the Chili, large, round, white, and a very useful strawberry, though many find fault with it as not being sufficiently high-flavoured (from the Chili has been produced Wilmot's superb, a very large handsome strawberry, with the parental defect of insipid flavour); the old Caroline, an excellent strawberry, later than the foregoing, firmer in flesh and finer in flavour, capital for main crops; the Hautbois, of peculiar flavour, much esteemed by some, but not generally cultivated; many of the plants are sterile males, and as they increase by runners even faster than the prolific or hermaphrodite plants, they must be carefully uprooted as soon as discovered, otherwise the bed at the end of a short time will be overrun with unproductive vegetation. The White Alpine and Red Alpine are useful for their late successions of fruit.

Amongst the celebrated modern kinds, the Elton, raised by Knight, stands high; it is a late variety, large, cockscomb-shaped, abundant bearer, and should be suffered to ripen thoroughly before gathering; Keens's seedling, very abundant bearer, early, well adapted for forcing, grown in immense quantities for the London market, and excellent for *first* main crops; it is tender-fleshed, however, and does not bear carriage so well as many others; in spite of which, it is a universal favourite with the market-gardeners. The British Queen is probably the best late strawberry.

"The Black Prince," says Mr. Cuthill, "is one of the most prolific kinds, and is very early. I have had it in my possession for three years, and have exhibited plants with two hundred fruit upon them: these plants were

three years old. It is a fruit of medium size, very dark, full-flavoured, and a first-rate sort for preserving. I think it will become a general favourite. By accident, I discovered an excellent plan for producing a late crop. I turned out about three hundred pot-plants, in full flower, during the very hot weather in April; a severe frost about the 1st of May destroyed all the bloom, and now, at the end of June, the plants are showing abundance of blossom, which no doubt will give a good crop by-and-by. They are planted in the open ground.

"Soils make a wonderful difference in strawberries: the very best is a sandy loam. In this they will not grow more to root and top than is necessary for the formation of good buds for the next year; while in a rich light mould, if the autumn prove wet, they will produce a large watery mass of tops, growing on to the middle of October, and producing no buds in the centre. I have practised the following plans on light soils. Where the strawberries were planted out in poor sandy soil, I have obtained a famous crop by giving plenty of liquid manure in the spring. A similar result followed when, before planting out the runners, I have taken out a spitful of mould, and put in its place a spitful of loam, and then planted the runners in this. I have also planted the runners in small pots filled with loam, and about the 1st of November planted them out for the next year's crop. I may state here, that I never put more than one plant in a pot eight inches deep; and in planting out of these for the next year's crop, they are put a foot apart in the row, the rows being two feet asunder.

"Where persons do not force, it is a good plan to trench the ground, and plant the runners a foot apart each way. By this means, a good crop will be insured for the first year; and after this has been gathered, every second row should be cut away with the spade, leaving the others for the second year. After this they should be destroyed as soon as they have produced enough runners for a new plantation. For many years I have

mulched between the rows with fresh stable manure, about an inch thick all over the ground, just as the strawberries were coming into flower. If the weather be dry, water should be given several times; this carries the strength of the manure down among the roots; and by the time the fruit begins to ripen, the straw will be quite clean and free from smell. It then forms an excellent safeguard against heavy rain dashing grit over the fruit, a thing above all to be guarded against. I have found this plan much better than that of using clean straw or short grass; but if plenty of liquid manure can be had, the case would be altered. The runners from pot-plants always bear a week earlier than those that have never been in pots. Cutting the roots or tops at planting-time is injurious to the young plants.

"I have tried various plans of hastening the ripening of the fruit out of doors; such as slates, tiles, stones, &c. These have their faults; they afford harbour for insects to breed below them. I have generally found that the hot sun, acting upon these materials, ripens the fruit prematurely, and it is consequently acid. This may do for the market, but not for private use. In dry seasons, the strawberry requires an immense deal of water, avoiding dashing the water over the blossoms; and if dry till the end of the crop, continue watering twice a week."

The Walnut-tree—Juglans regia—supplies excellent wood for furniture and gunstocks, as well as nuts for dessert. The green fruit, before the kernels are formed, makes a favourite pickle; a useful sauce,—walnut ketchup, is obtained from the outer husk of the ripe fruit, which is also employed by false gipsies to stain themselves brown. The leaves of the tree are odoriferous; and it is said that, if you sit in its shade, flies will not sting you. The oil expressed from walnuts is used by painters. Propagate by sowing nuts of approved kinds: when grafted, it is apt to bleed injuriously.

THE CALENDAR;

A REMEMBRANCER OF KITCHEN-GARDEN OPERATIONS.

OCTOBER.

THE gardening year may be considered as commencing with this month; both because gardens are mostly taken possession of at new or old Michaelmas, and because now is the time to lay a foundation for the coming year. The character of the work done is *preparatory*. Look forward; lay out your plans. Make ready for planting fruit-trees and bushes. Clear away all weeds and unnecessary remains of preceding crops; they would only harbour vermin, and exhaust the ground. Those which you cannot dig in at once, will be converted into useful manure by the aid of your pig's stomach and hoofs. Sweep away the withered leaves as fast as they fall, and barrow them to the compost-heap. Now, and during the next two months, is the time to show whether you are a *neat* gardener or not. Look out for, and destroy pitilessly, snails and the large black-and-orange slugs on their way to their winter retreats. Killing the parents in autumn, saves you from feeding their young in summer. Inspect your onions, seeds, and whatever else you have already in store, and take the hint which the least mould or rottenness gives you. Make fresh strawberry-beds, if not done before. Plant out coleworts, early summer cabbages, and onions sown in August and September; also lettuces to come on in spring. Most carefully weed and hoe young crops intended to stand the winter; such as spinach, carrots, &c. Sow corn-salad, winter spinach, and a speculative crop of cauliflowers to remain as seedlings in the open ground. Gather tomatoes to ripen

indoors. Store apples and pears. Earth up celery, cardoons, and leeks. Plant handsome roots, to bear seed next spring, of carrot, parsnip, turnip, and celery. Complete your stock of seeds and pickles that have been previously forgotten. Remember that the days are getting shorter and shorter, and make the most of every minute of daylight. Clear your sweet herbs and garnishings from dead leaves and rampant growth. Secure in pots a few roots of those which are apt to perish from severe frost, such as sweet or knotted marjoram, and tarragon. Make the most of your mushroom-bed; when exhausted, let it remain till spring. It will then help you to make an outdoor bed, often very productive. See that your winter greens and turnips are in handsome order.

NOVEMBER.

One of the busiest months in the year; besides which, you ought to work as hard as if you were sure that, during December and January, the ground would be hard bound with frost and snow. Generally, prune, plant, and transplant all you can. Divide the roots of such perennials as require it. Store carrots, parsnips, beet, salsify, scorzonera, skirrets, and Jerusalem artichokes; also winter apples and pears. Make a last storing of potatoes; of which you may make a winter planting at the end of the month. Lift and replant *a portion* of your broccoli, to help them to stand the winter, as directed in the body of the work. Sow early peas, and long-pod, Windsor, and fan beans for a first crop. Protect fig-tree branches. Prick out anything neglected last month, or for which there was not yet room; as lettuce, red cabbage, summer cabbage, Tripoli onions. If the weather continues open, you may still sow orache, spinach, saladings, parsley, onions, radishes, and cauliflowers, with more or less certainty of success. Continue to make an unrelenting clearance of all sorts of rubbish, and also to inspect your stores within doors. Make layers of vines, and whatever woody plants you

propagate in that way. Place in a warm shed a few artichoke-stools as a precaution. Hang up, secure from frost, a supply of blanched endive and late cauliflowers. Pick the berries (for seed) from asparagus. Cut down the stalks when *quite* sear; weed the beds by hand, and mulch them well with stable-dung. Clear the dead leaves from the seakale-stools; earth them up, or cover them with pots for forcing, according as the supply is wanted. Strong roots planted in large pots, and kept in a warm dark cellar or closet, will furnish a few early dishes. After cutting, the plants may be returned to the open ground. Dig in manure around your artichokes, rhubarb, currant-bushes, and raspberries. Cut away the canes of raspberries which have fruited during the current season, if the operation was not performed, as it ought, as soon as the crop was gathered. Plant cuttings of gooseberries and currants. Clear away the yellow and rotting leaves from the lower part of the stems of broccoli, savoys, and other winter greens. Dig in sprouting weeds as much as possible: cleanliness and the destruction of vermin are even more necessary than during the previous month. Plant garlic and tree-onions, if not done before. Look to your earthed-up celery, and finish off whatever remains. Cut off carefully the *dead withered* leaves, and remove unnecessary runners from old-established strawberry-beds; but by no means make a general mowing of the foliage. Tidiness will prevent many of your crops from damping off and rotting, if the winter prove mild and wet. Do not forget your quinces and medlars. As far as present crops permit, prepare ground for planting or sowing in early spring such things as carrots, onions, parsnips, asparagus, seakale, or rhubarb. When you can, lay the earth in ridges, to expose it to the action of frost. Increase your store of treasure in compost-heaps. Care in this respect makes all the difference between suffering from nuisances and being provided with fertilizers. If you grow your own cabbage-seed, plant out your handsomest specimens in situations where they are not likely

to be hybridized; but it is better to buy. Look to the plants pricked out or planted in autumn, to see that the worms have not drawn them in, or the rains washed them out of the ground. Staking fresh-planted trees and shrubs (standards), helps them to lay hold of the ground as they form fresh root-fibres.

DECEMBER.

CONTINUE to plant, transplant, and propagate by division of the root. So long as open weather permits, get forward with the work you would have to do in spring. Complete the pruning of all the hardier trees and shrubs; those likely to be affected by the frost, may be left till February. A great point is, to settle everything in its place at your earliest convenience. They will be establishing themselves while you are sleeping or warming yourself over a good seacoal-fire. Plants are never *entirely* at rest or stationary, not even during the hardest frost, as weeds will tell you; so long as they continue alive, the processes of vegetable life are going on, with more or less rapidity. Even in bulbs taken out of the ground, internal changes are taking place. Hence plants removed in November or December will have almost made themselves at home by March or April; whereas, if transplanted in March, they would have *that* root-work still to do, besides the spring and summer functions required of them. No wonder many perish in the attempt. Dig up a few sticks of horse-radish, in case of frost at Christmas. If your first-sown peas are fairly out of the ground, sow a succession; if not, wait till they are, in January or February. If hard weather comes on, employ yourself in *taking stock*. See what seeds you have and require; make neighbourly exchanges; ascertain the condition of your roots in store; secure a supply of pea-sticks for early spring; attend to the repair of tools, fruit-tree-nets, &c.; stop out Jack Frost from places where you do not want his presence. Contrive if your garden outhouses cannot comprise an

icehouse amongst their number; consider that recommended in Cobbett's "Cottage Economy." During hard frost, cart or barrow manure and heavy materials to the spots where they are wanted. Make war on rats and mice. Drain where required. Think of your salads of chicory and barbe de capucin. Mulch around the roots of pear, peach, and apricot trees. Give a heavy mulching to your beds of rhubarb. Scare away birds from the buds of your currants, gooseberries, and cherries. Sprinklings of soot and lime will preserve many seedlings from the attacks of slugs, which are awakened by a mild day and a gleam of sunshine. Drought is now less to be feared than too much moisture. Hoeing the surface when you can, and keeping it loose and open, prevents the frost from penetrating deep. Plant shallots and potato-onions on St. Thomas's Day. Look over your fruit stores once a week.

JANUARY.

Your prospects on New Year's Day will depend somewhat on the weather, but mainly on the industry and forethought you have exercised during the past quarter. Too often June and July teach the lesson that procrastination is the thief of garden produce. Put not your faith in a mild winter. April is sometimes more cruel than January. If your peas and beans are up and luxuriant, if your lettuces and small salads spread, sow more, in case of their being cut off prematurely. Keep up a reserve successional stock of such things *in* and under the ground. They will be safer there than their more venturesome fellows, and will be growing at root while covered with snow. Set out successions of early York cabbages and coleworts. Tie your woollen comforter round your neck, walk leisurely about your garden, and consider well your arrangements for the coming season. As soon as any winter crop,—as celery, savoys, &c., is removed, level, manure, and dig the ground, weather permitting; remembering that nothing is gained

by burying ice and snow. You only put it underground, in a sort of natural temporary icehouse, to chill the soil on the return of spring. Leave the bearing wood of peach, nectarine, and apricot trees unnailed, to keep the blossoms as backward as may be. Draw a little earth to the north or north-east side of such rows of peas and beans as are above ground. Note in your mind the position of last year's crops, in order to fill the same spots with plants of a different character, and insure a wise rotation.

FEBRUARY.

This and the next are two busy months. Seize Time firmly by the forelock; hold him fast, and do not give him breathing-time till he has dragged you to the middle of May, when you may set your arms akimbo on each side of your apron, and look round for an hour or two, to contemplate the result of your prowess. You may now venture on sowings of many things *with a chance* of success, in proper situations,—Early Horn carrots, scarlet short-top radishes, Spanish radishes, Bath Cos lettuces, celery, parsnips, leeks, chervil, parsley, &c. &c. Do not be disheartened if they fail, but at them again. A stout-hearted gardener will never say die. Pass in review all your autumn-planted troops; remove the dead men, and fill up their places with fresh recruits from your own or your neighbour's stock in reserve. Sow dwarf marrow-fat peas, plant horse-radish. See to your forced seakale, taking care not to burn it. Plant out onions and leeks for seed. Thin out and use your forwardest winter spinach. Make a final planting of August-sown cabbages, refraining, however, from that kind of work when the ground is in a sloppy state. Sow a succession of beans, which will be sufficient, if the former sown promise well. Cover the crowns of your rhubarb-plants with wicker baskets or loose straw. Arrange this-year's-bearing raspberry-canes as directed. Plant strawberries, if you could not do so before. Look to your potato-onions and shallots, which ought to be sprouting. Plant

early potatoes, ash-leaf kidneys, and Poor Man's Ready Pennies. Plant a tuft or two of chives, mint, &c., in a mignonnette-box, to force in a warm kitchen or bake-house, for salads and sauce. Sow mustard, cress, and radishes on a hotbed, under handlights or a frame. Observe whether your hazel-bushes have a sufficient proportion of male blossoms; if not, supply the deficiency as directed. Give your strawberry-beds a dressing of well-rotted dung. Cut off scions for grafting, and stick them in the ground "in graft."

MARCH

And Main Crops both begin with an M. Remember that they are even more closely connected than that. Plant and sow all sorts of things. Look over your garden, to see what room you have to spare; look through the nurseryman's and seedsman's list, and the advertisements in the "Gardener's Chronicle," to discover what you most require. Make new asparagus-beds and plantations of seakale, by means of seeds or seedling plants. Gently rake off the coat of manure from the top of bearing asparagus-beds. Shelter your rhubarb, giving it all the light and air you can. Sow Altringham carrots, parsnips, onions, leeks, radishes, spinach, lettuce, purple broccoli, savoys, Brussels sprouts, celery, cauliflowers, marrow-fat peas, red cabbage, Battersea cabbage, for late summer use, drum-head cabbages, for autumn and winter, beans, —if you *must* have more, aromatics and small herbs. Plant Jerusalem artichokes, stick forward peas, nail in the shoots of peaches and apricots as soon as the blossoms begin to peep forth. Do everything now which you ought to have done before, and have not. Sow, on hotbeds, all sorts of tender annuals for planting out in May and June; such as cucumbers, gourds, tomatoes, ice-plants, New Zealand spinach, capsicums, sweet basil, &c. &c. In the more moderate temperature of a green-house, or cold frame, you may forward in the same way scarlet runners and kidney beans, to be trans-

planted. Plant in highly-manured ground, where they are finally to remain, a portion of your autumn-sown cauliflowers, which have survived the winter. Unbind and expose to the sunshine the branches of your fig-trees, taking care to cover them again with their hay-bands before night-fall. Never mind the trouble, if you have figs when others have not. Attend to general neatness, and examine your stores of fruit, seeds, and roots. Iron is cheap; therefore, don't be afraid of wearing up your hoe and rake. Plant main crops of potatoes. Graft apple and pear trees. Plant cuttings of curious ragged-jack kale.

APRIL.

You now ought to be mainly employed in watching the results of last month's labours, and in replacing immediately any decided failures. See that the seeds you have sown vegetate, and the roots you have planted are doing well. You can mark with sticks any blanks you may observe as you are hoeing and weeding the drills and beds. You may speculate on a crop of early turnips; but perhaps they will all run up to seed, if they are not eaten off by insects. Clip box edgings. Make successional sowings of Oxford Tom peas, radishes, lettuce, cauliflower, white broccoli, savoys, and Brussels sprouts. Sow couve tronchuda and kohl-rabi at the end of this month or the beginning of next; also nasturtiums, salsify, and scorzonera. Plant skirret roots. A sowing of sweet basil and knotted marjoram will sometimes thrive well in a south border. Propagate by slips, cuttings, and offsets, perennial culinary plants and aromatics. Sow spinach, purslain, and orache. Water strawberries during drought; but if you begin watering, you will have to go on with it till rain falls. Sow garden beet, for salads; also the main crop of celery. Attend to your cucumber-plants, and other tender annuals under glass. Keep your eye on the seakale, earthed up in the open ground. That growing at the foot of a south wall may perhaps be fit to cut before the month is out.

Water turnips as they come up, till they have two or three rough leaves. Water, too, is often well bestowed at this time on things which have been transplanted during the previous winter. Prepare beds of well-rotted manure for pricking out celery. Protect fruit-tree blossoms, or leave protection alone, according as your own judgment or experience shall advise; for doctors differ. Try a second sowing of turnips at the end of the month; and if you are very far south, or sheltered, you may venture on a few Robin's-egg kidney beans. If they rot before coming up, or turn yellow afterwards, you will not be greatly surprised. Nail figtree branches in their places on the wall.

MAY

Forms a new epoch in the gardener's year. Summer is coming, sometimes *is* come. Still, look forward to autumn and winter, by sowing and pricking out the earliest broccoli and endive. The close of the month is the moment for sowing and planting out main crops of such things as kidney beans, scarlet runners, tomatoes, cucumbers, gherkins, and other tender annuals; but it is best not to be in too great a hurry, and to observe the signs of the times. With cutting north winds and frosty nights, it is easy to make more haste than good speed. In the absence of showers, water strawberries and fresh-planted vegetables liberally. Hoe and earth up potatoes as they advance. Do not be afraid of the weeds, but cut away. They must either be your master, or you theirs. Prick out the earliest celery. Sow marrow-fat peas, late endive, and successions of broccoli and Brussels sprouts. Hoe and thin onions, carrots, and parsnips. Sow successions of Scotch kale and Battersea cabbage; the latter will come exquisitely tender and delicate; sow also late cauliflower, which liberally supply with liquid manure. Turnips sown now will have really a good chance; the same of tender sweet herbs, such as knotted marjoram. Catch and kill queen wasps: every queen killed now is a nest destroyed. Pinch, break, or

rub off all unpromising shoots from your vines. Level and manure the ground from which seakale has been cut, exposing the crowns to sun and air: the more vigorous the growth of the plant during the current summer, the finer will be the kale the following spring. Sow successions of lettuces, if you like; but *scarole*, or broad-leaved endive, is the real salad for autumn. Draw *away* the earth from the bulbs of shallots and potato-onions. Twist the stems of garlic, to check their fruiting *at top*. *Don't* sow spinach, but water what you have previously sown. Give liquid manure to orache; the same to asparagus; the same to sorrel, which cut from time to time, whether you want it or not, to encourage a successive growth of young leaves. Wage indiscriminate war on caterpillars. Remove unnecessary shoots from artichokes, and stir the ground well about their roots. Thin seedling cardoons, and also beet-root, as soon as each has attained the thickness of a crow-quill. Get ready your trenches for celery. Gradually disbud apricots and peaches, and destroy the caterpillars which roll their leaves, and those of other wall fruit, as pears. Plant out cauliflowers and broccoli, taking advantage of showery weather.

JUNE.

THIN the crowded fruit of apricots, for tarts; also thin peaches and nectarines. Make the most of your asparagus-beds while the season lasts. Hoe potatoes, onions, carrots, and other summer crops. Stop the vine-shoots which show fruit. Shorten the watery shoots of currants and gooseberries. Sow peas, turnips, and kidney beans. Plant out cabbages, broccoli, Brussels sprouts, and savoys; also leeks and endive. Prick out celery. Plant very early celery where it is to be blanched. At the end of the month, take up the shallots and potato-onions planted in December; if they were set later, they will be ripe later, and not so fine. Do all you can to encourage the growth of tomatoes, gourds, and cucumbers. Make good use of the hoe, and remove the remains of every

crop the moment it is done with. Cabbage-stumps and the haulm of gathered peas, ought not to encumber the ground a single hour. Top beans as soon as they show a sufficiency of blossom. Water late-sown peas. Look over the summer shoots of your wall and espalier trees. Throw straw in the alleys of your strawberry-beds, to prevent the fruit from being splashed by rain. Attention to all sorts of winter greens. Clip quick-set hedges.

JULY.

CEASE cutting asparagus; weed the beds, and dose them with liquid manure. Sow no more peas; celery and turnips will occupy the ground with more certainty and profit. Green (by exposure to light) early seed-potatoes, for next spring's planting. Gather sweet and aromatic herbs, and dry them in the shade; a good way of preserving them, is to reduce them to powder, and keep them in well-stopped bottles. Bud cherries, plums, and peaches. At the end of four or five days' warm dry weather, think of your empty pickle, preserve, and jam jars. Look over tomatoes, and suppress all useless laterals, keeping the branches which remain well nailed against the wall. Shorten unnecessary growth in cucumbers and gourds. The August-sown onions will now be coming into use, though not sufficiently ripe to be taken up for store. Plant cauliflowers, kohl-rabi, and couve tronchuda for autumn. Plant out great breadths of celery, cauliflowers, savoys, broccoli, and other autumnal and winter greens of the cut-and-come-again class. Sow a few dwarf kidney beans as a spec. Cover with nets any cherries or currants that you may desire to keep late from the birds. Collect such seeds as are ripe. Remove the superabundant wood from vines. Cut away the old canes from raspberries as soon as the last fruit is gathered, to let the young ones attain vigour and ripen their wood. Sow early York cabbage at the end of the month. Plant out May-sown cabbages. Pick off the blossoms from potatoes, and keep them clear from weeds.

Sow a very few turnip radishes. Earth up your forwardest celery. Look over your vines and currants and gooseberries. Attend to the earthing-up and sticking of late-sown peas. Regulate the growth of espalier and pyramidal trees.

AUGUST.

THE great difficulty of this month is want of room. The end of one season and the beginning of another do more than touch—they lap over each other. Therefore, make all the clearance you can by completing your stock of pickles, preserves, and dried herbs. Sow Tripoli onions, and others, to stand the winter; also parsley, spinach, York and Battersea cabbages, and small salads. Remember, that to have fine winter greens, this is almost the last time of asking. Remove broccoli, savoys, Brussels sprouts, to the places where they are to stand, and pay great attention to hoeing those already established. Do not neglect your tomatoes; remove superfluous leaves and shoots, and suffer no further onward growth. Earth up any full-grown celery, and supply that coming on in the trenches with abundant waterings during drought. You may top late-sown peas, to hasten their productiveness. Every fortnight, from this time forward, blanch, by tying up, as many plants of endive as your family require during that period. You may also think of blanching your forwardest cardoons. Bend back the stems of your spring-sown onions, to promote their bulbing. Do it gently, repeating the operation several times, rather than roughly at once. Cut off, close to the ground, the flowering-stems of such artichokes as have borne. Promote the luxuriance of seakale, asparagus, rhubarb, and sorrel, by copious waterings with weak liquid manure. Make new strawberry-beds, selecting the *first* runners. Sow red cabbage; also early Horn carrots, to come in spring. Drought, whether natural or artificial, is now conducive to the health of cucumbers, gourds, and tomatoes.

Leeks may still be planted out, but they will not prove so fine as those which have already taken firm hold of the ground. Encourage the ripening of the wood of your fruit-trees by removing useless twigs and leaves. You may now sow lettuce to stand the winter. Make an autumnal mushroom-bed. Exercise your wits to economize space, and to make winter crops tread on summer crops' heels as closely as possible. You may often sow or plant between rows of vegetables which are themselves to be removed in a week or two. Sow your stock of winter turnips as early in the month as possible; hoe and thin those already coming forward. Look to your salsify, scorzonera, and skirrets.

SEPTEMBER.

When you hear the first gun pop at the unhappy partridges, remember, if you have forgotten, or been unable to do anything which ought to have been done in August, and remedy the omission before the sun goes down. You *may* still sow onions and lettuces to stand the winter. You will be sure to be successful with your sowings of spinach, radishes, parsley, chervil, corn-salad, and mustard and cress. At the end of the month, prick out August-sown onions and lettuces. Continue to blanch endive. Gather ripe tomatoes, and help green ones to sunshine. Harvest ripe onions, and plant goose-necked ones in rows for winter use. Slip muslin bags over your grapes, if you do not mind losing the bloom. Protect peaches and nectarines from wasps by wrapping tow round them. Help the summer shoots of your fig-trees to ripen. Wheel out barrowfuls of strawberry runners, cabbage-stumps, kidney-bean stalks, and weeds, to ferment and rot on the compost-heap;—they had better rot there than *in* the garden; in short, make a general clearance of used-up things. Attend, however, to your seeds, and to cuttings, runners, layers, offsets, &c., of *what you want* for yourself and friends, especially if you are going to remove at Michaelmas.

Take up garlic and late-planted shalots. You may now replant cloves of garlic. Cut down early-sown, over-luxuriant parsley close to the ground. You will now see your celery really grow, if you have used it well. Earth up a portion, leaving the rest till next month. Broccoli and winter greens will repay every care bestowed on them now. Blanch cardoons. Let artichokes run wild, merely hoeing them and keeping them free from weeds. See that the slugs do not spoil your cauliflowers and couve tronchuda; break inwards a few central leaves of the former, to save them from early chance frosts. Pluck up rank sow-thistles and shepherd's-purses from out your leeks and other standing crops. Suspend wide-mouthed bottles, half-full of sugar, water, and gin, amongst the branches of your wall-fruit trees. Sow turnips, to produce green turnip-tops in spring. Take up such potatoes as are really ripe, greening those you reserve for seed.

Enjoy the summer innocently while it lasts. Treat your master well, if you happen to be a servant; treat your servant well, if Providence has made you a master. Be thankful to Heaven for the blessings of health, strength, and freedom; and remember that a gardener's work is never done.

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THE

FLOWER GARDEN,

&c.

NOTICE.

Flowers and their culture have a whole literature to themselves. Hundreds of pounds might be spent in forming a floral library, and years devoted to studying its contents. Will, therefore, the Reader violently complain if he finds *this* Flower Garden incomplete in certain details, and even blemished by sundry small errors,—to avoid which last, however, all pains have been taken? It pretends to exactly as much as, and no more than, its predecessor, "The Kitchen Garden;" and will be content to receive the same meed of approbation, and to exercise the same amount of usefulness.

In all pursuits, there must be a first step,—an Indicator to the grand highways which lead to success and eminence. It is something to have taught an apprentice hand not to attempt too much at once;—to have pointed out to him *where* the difficulties of his Art lie,—*what* he may undertake with confident ease,—and to achieve *which* results he must gird up

the loins of his Intelligence and his Industry,—at the same time that he is presented with a general sketchy map of the vast country which lies open to his exploration. If the fair-judging Reader shall decide that this has been effected by the KITCHEN and the FLOWER GARDENS, it will be an encouragement to the Writer to volunteer as gate-opener to other fields of Philobotanic Literature.

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THE

FLOWER GARDEN.

It would be an inconsiderate employment of our limited space, to repeat here such preliminary remarks to "The Kitchen Garden," as are applicable to horticulture in general. The plants which are candidates for admission into the flower garden, are very much more numerous, and more varied in their constitution, native climate, and soil, than those cultivated for culinary and economical purposes. But the wider and more discursive the topic, the stricter is the economy of packing room forced upon the literary workman, who has only a certain number of pages allowed him in which to arrange his superabundant materials.

Floriculture differs from kitchen-gardening in one grand principle,—that, whereas the latter has no free-will in the choice of the objects of its care,—for whether in Great Britain or Australia, in Russia or in Italy, a gentleman's household *must* be supplied with all possible, as well as all necessary, vegetables and fruits; the flower-gardener enjoys a wide range, and liberty of selection, which makes a failure on his part incalculably more discreditable. *He* has only to keep up a goodly show, to maintain a fair outside, no matter with what materials; if one thing will not prove effective, let him try another; if one family of decorative vegetables will not suit his latitude, his aspect, and his soil, others, perfectly adapted to it, will almost beg him to patronize them. While the unhappy kitchen-gardener is compelled to furnish peaches in June, grapes in April,

spinach all the dog-days through, and the materials for green-peas-soup in February,*—under every condition of the elements, and often with defective material appliances;—the master of the ceremonies to the parterre and pleasure-ground has full *carte-blanche* given him: his employer merely says to him, in so many words, or by implication, "Let me have something pretty to look at, and cheerful to walk in; let the out-door apartment of my mansion, which we call 'the garden,' be always tasty, gay, and well furnished with seats and leafy alcoves for the ladies,—with fountains to serve as lustres, and their basins as mirrors,—with sun-dials instead of timepieces,—a smooth carpet of verdant turf softer and more elastic than a Persian rug,—and, everywhere that you can contrive to place them, well-chosen combinations of the brightest colours. You may order to any reasonable extent of the country nurserymen; and whenever I go to London, I will send you down any striking object that may chance to be attracting attention there. Only let me have a well-kept flower-garden, and I shall be content. If we can show finer and more remarkable specimens than our neighbours, so much the better; if not, at least let our garden be as good of its kind as theirs." The gardening artist who, under such circumstances,—with the accumulated treasures collected by Fortune, Lobb, Douglas, and other intrepid discoverers, at his disposal,—fails to produce a pleasing and harmonious effect, is almost left without excuse.

Therefore, in the laying out and planting gardens and pleasure-grounds, the wisest principle to start from is, not to gratify your own particular predilections in favour of certain classes of flowers and shrubs, but to make *them* subordinate to the local circumstances in which you find yourself placed. *They* must be the leading guides of what you will most cultivate, and even of your plan. Thus, in many famous gardens on the continent of Europe, many evergreens, which give the charm to our own shrubberies during a considerable portion of the

* See the Gardener's Chronicle for January 5, 1856.

year, either will not stand the winter, or are sure to be severely injured by it. Laurels, laurustinuses, arbutuses, bay-trees, and even Portugal laurels, are kept in tubs, that they may be housed when frost comes. Now, surely those gardeners show better taste by *refraining* from the employment of such evergreens in the same massive clumps as we do, than if they were to persist in parading half-dead and half-naked regiments of unacclimated and unacclimatable plants. Again: there is a tribe of plants, commonly spoken of by gardeners as American plants, with brilliant flowers, often of curious shape, and peculiar texture—often, too, with evergreen foliage,—which *must* have a special soil, heath-mould, to grow in, and which are the better for breathing an atmosphere of equable moisture. Rhododendrons, azalias, heaths, and kalmias, are of notorious beauty. Now, although beds of American plants may and ought to be made where the soil is not naturally suited for them, —and instances of horticultural success in this line are far from uncommon,—the principle here advocated is, that where the soil and climate are inherently congenial to American plants (as is the case in numerous sites in the hilly parts of England, Wales, Scotland, and Ireland), *there* American plants should be made the leading feature of the flower-garden and the pleasure-ground. Thus, not far from Penzance, in Cornwall, there is an extensive grove of pinasters, with an underwood of gigantic rhododendrons,—whose blossoms hang beyond the reach of the tallest man mounted on the tallest horse, now meeting overhead in thickets, now dispersed as independent evergreens. It would be in vain to attempt raising similar specimens under ordinary conditions of planting, while it was a happy idea to plant them where they flourish so luxuriantly. Again: the cypress is a magnificent ornament to the gardens of the south of Europe; but it requires a long roasting summer to make it put forth all its strength. It is respectable in the south of England; shabby-genteel higher up the island; in the north, miserable and poverty-struck

Of course, local circumstances, and especially peculiar skill and care, can modify the average effects of latitude, —even within a dozen miles of Edinburgh some decent specimens are to be seen; but wherever, in spite of a fair trial of sedulous attention, the cypress sinks below the standard of respectability, there is no wisdom in continuing the fight against nature—the idea is to be manfully dropped. Too often do we groan over the aspect of cypresses that look as if their owner were taking care of them against an apprehended scarcity of birch-brooms. It would have been much better to plant in their place holly, Portugal laurel, box, and yew. *Hardy* evergreens only are admissible within the boundary of a sensible gardener's domain. In short, it is true wisdom in ornamental gardening to long, not for what is most difficult, but for what is easiest to obtain, supposing it to be good in its way. Unusually fine specimens of ordinary plants are more admired than shabby specimens of rare ones; and, for still stronger reasons, a collection of fine, well-grown individuals is a more attractive sight than a collection of wretchednesses, however distant may be their native spot, or however much money they may have cost at the nursery. It is needless to explain that the above remarks do not apply to experiments in planting out, and testing the hardiness of newly-arrived species. In such cases, some risk must be run. Those who succeed, have the gratification of drawing the prize (which they well deserve) of having handsomer, because older-established, plants than their neighbours growing out of doors, as happened to those who first ventured the Deodar Cedar and the Cryptomeria Japonica to stand the winter as garden-trees, and the Dielytra spectabilis as a border-flower.

Even the plan, form, and character of the flower-garden must be moulded by circumstances. It must be open, and yet private; secluded from intrusion, and yet exposed to light and air. It must be conveniently near; as much under the eye and as open to the constant and immediate visits of the persons who are to enjoy it as

can possibly be contrived: keeping in mind the notion that a flower-garden is a sort of open-air apartment, it should harmonize, both in style and magnitude, with the residence of which it forms a part. Only one discrepancy is permissible; a small but handsome and tasty cottage may stand in the midst of large and luxurious gardens. Even then, the disproportion should not be too glaring. But, except in the largest cities, a vast house, a semi-palatial abode, with only a few square yards of court, and no garden, or only a tiny apology for one, is as offensive to good taste as it is inconvenient and uncomfortable to its occupants. The style, also, of the flower-garden must correspond with that of the house and grounds, and carry out the date of the architecture. An Italian mansion, on the slope of a hill, should have its terraces, vases, balustrades, and flights of steps leading to the several levels of horizontal flower-beds, forming something like what Sir T. Browne called "the pensile or hanging gardens of Babylon." If the park is laid out in avenues, and the house is either in the Dutch or the Elizabethan style, then a geometric garden, with formal evergreens, with clipped yew hedges, and even with verdant, living sofas, obelisks, peacocks, statues, and ships of box and yew, will be in harmony. While a park in the Brownean style of landscape-gardening, allows the flowers to be distributed in their place in the artificially-natural mode (as if the gardener were composing a picture, or a scene for the opera), which is known all over Europe as eminently the English style of gardening. As a rule, the more wild and secluded the district in which the house is located, the more highly finished and well dressed ought the garden to be. In the highlands of Scotland, in the valleys of Wales, on the moors of Cornwall and Devon, the traveller has seen enough of thickets and rocks, and of wild nature in general; but a distant glance of his trim and regular garden, a peep at the top of trees and shrubs which are not to be found on the mountain-side, recall him at once, in idea, to his HOME, and forestall the realities of repose and comfort.

But, whatever style of garden is adopted, one grand miscalculation should be guarded against;—it is the *large* garden, which is too often coveted in the place of one in perfect trim. Men *will* grasp at more than they can carry, when they are allowed the permission to take up a *fair* armful of happiness; and so they forget the golden maxim, whether for the parterre or the cottage allotment,—

——— "laudate ingentia rura,
Exiguum colito."

"*Praise* an extensive country estate; cultivate a little one."

Flower gardens may be divided into three classes, TOWN GARDENS, VILLA GARDENS, and COUNTRY GARDENS, or the gardens attached to gentlemen's country seats.

TOWN GARDENS.

The first point to carry, in these, is to get *something* pleasing and ornamental to grow; what those somethings are, will depend entirely upon circumstances. There are localities where almost nothing, in the shape of vegetable organization, can preserve life. Near Wolverhampton, the hardiest weeds are all that can be seen; and around the alkali works in the north of England, the trees and hawthorn hedges are killed; the herbage alone exists, and that does not always remain uninjured. It is clear that in a country town, of from five to ten thousand inhabitants, where no smoky or gas-exhaling manufactures are carried on, a longer list of plants can be grown and bloomed, than in the heart of London or Manchester. Therefore, the town gardener must be content with what he finds by actual experiment will bear his own peculiar climate. His first object must be to have abundance of fresh and healthy foliage; his second, though equally desirable aim, to enliven it with all the flowers he can. As to style, in small country towns, a landscape garden can be effectively laid out, where there is a brooklet, a bit of meadow, a rustic bridge, and a distant peep of the

open country. The smallest bit of real rural horizon is an invaluable element in horticultural picture-making. But in large cities, a geometric or symmetrical plan is mostly the only available arrangement. Advantage may be taken of a passage, an archway, or a line of building, to help to form a vista or avenue, and to give the idea of greater extent than really exists. If people were not afraid of being reproached with a Cockney taste,—which taste is often no more than the wise and laudable desire of deriving the utmost amount of enjoyment from the most limited capabilities and materials,—the Chinese style of gardening might be very advantageously employed in very many town gardens. It allows the display of many ornaments, it courts the introduction of incongruous flowers, it affords a place for the whims of wealthy fanciers, which otherwise must be excluded. The Chinese are admitted to be excellent gardeners, even by those who do not admire their taste. A Chinese town garden, employing pot-plants, dwarf trees, movable trellis-work, and temporary summer-houses and flights of steps, in the same way that scenic artists use what are called "properties" on the stage, might be made an ever-varying fund of amusement. The intelligent reader will have little difficulty in developing the hint thus started, especially after perusing the instructive and amusing works of Robert Fortune.

Shirley Hibberd, in "The Town Garden," makes the following sensible remarks:—"In an ordinary town garden, measuring, say some thirty feet by sixty, anything beyond a plain arrangement of oval and circular parterres, separated from the wall borders by a plain continuous path, is out of the question. Some people sketch out a narrow path of the most serpentine outline, which from a distance looks like a sandy snake; and this (after leading a visitor from the back door by a number of convolutions over every square yard of the entire garden, until he is dizzy with curves returning again and again upon themselves) ends abruptly in a high grimy wall, against which a few stones are piled to represent 'rock-

work.' Now, besides the absurdity of a serpentine path in a small garden, such a path is made still more ridiculous by the fact of its leading nowhere; whereas a simple division of the soil into parterres and gravel paths—without any attempt at the country lane or lovers' walk—accomplishes all that it professes, by enabling the visitor to reach any object that attracts him, the path itself remaining a convenience, *not a feature.*

"Most town residences have front plots, and these, if well kept, add very much to the neatness, cheerfulness, and indeed respectability, of a house. Just as we judge of a man by his dress and general bearing, so may we judge of him by the appearance of his home. A scrubby pair of neglected chrysanthemums trailing over a sour and ragged grass-plot, or a sooty shrubbery of untrimmed, worm-eaten, and flowerless lilac-trees, do as much to disgrace a house and its occupant, as a string of pewter pots dangling from the garden railings, and half-a-dozen broken windows. A front plot, being smaller, requires, of course, less labour than a garden, but, if possible, more taste. Lay out your plot in the simplest manner possible, and do not suffer your neighbour to laugh at an endless variety of parterres of all shapes and sizes, edged with oyster-shells, and filled up with plants that would disgrace a common. One central bed, and a continuous border, are usually all you have room for, or, at least, three (always prefer odd numbers) beds of equal sizes, and in these you may keep up a show of annuals and herbaceous perennials. The centre of each bed should have a handsome flowering shrub; and near the house one or two laurels and a holly will serve as a screen against dust, and ensure privacy for your windows. A very small plot is best laid down with grass and clean gravel, without flowers at all; in the centre, a variegated holly, box-tree, or laurel, may be planted; and all the labour required is to keep the grass closely shaven, or the gravel neatly swept. Here the object must be to produce a neat appearance, and to avoid all attempts at bewildering outlines, massive shrubbery, or thin sprink-

lings of innumerable colours. If you do not indulge in box edging in your garden behind, you should have it here if you grow flowers, it adds so much to the neatness and completeness of your outlines."

Symmetrical gardens in towns offer the advantage of small, regular, corresponding beds, which may be kept gay by flowers grown in masses, many of which may be replaced by others soon after their bloom is over. Bulbous flowers are invaluable for this purpose; the *first* season, they are almost always sure to blossom well, because they have formed their flowering germs elsewhere, under more favourable circumstances. The White, Tiger, and Orange Lilies, as well as the Crown Imperial and the Hemerocallis, may remain permanently, if the situation is not altogether too close. Van Thol, Parrot, Bizarre, Double, and all the robuster Tulips; Hyacinths, Crocuses, Snowdrops, and Narcissuses, will all bloom exceedingly well, if grown in town and country in alternate years. Those who have a town-house and a country-residence, or who can even make an arrangement with some country market-gardener, may thus maintain a collection of bulbs in serviceable condition for many years. With only a moderate double set, a few beds in town may be made gay every successive spring and summer. But in carrying out this, or any other like floricultural expedient, be it remembered that the plants must be set in *proper soil*. Townspeople are apt to fancy that earth is earth, and that nothing more is to be thought or said about it. Whereas, the soil of town gardens is not only exhausted for want of manure, but is often actually poisoned by deposits of soot, and other causes that have been in action for centuries past. Consequently, if you wish your flowers to thrive, provide them with a healthy medium for the reception of their roots, cart away as many loads as are requisite, and replace them with soil that is pure and fresh, whether from meadow, field, or heath. Small azaleas and rhododendrons render useful service in town, from the ease with which they may be transplanted in spring, with

their flower-buds already formed. The latter shrubs fulfil the double office of flowering plants and evergreens. When their leaves are begrimed with dirt that is plastered on them by the wind and rain, it is not altogether a loss of time to spend a few hours in washing them with a sponge and tepid soap and water. Many rhododendrons have the habit of flowering abundantly *only* every alternate season. Therefore the novice will not be discouraged at seeing but little bloom the *second* year, provided they have been planted in a bed of heath-mould. Birthworth, the Blue Passion-flower, Virginian Creeper, the White and Yellow Jessamines, several species of clematis, and ivy, are perennial creepers that bear the town air well, as does the Everlasting Pea; annuals are the Scarlet Runner and its variety the Painted Lady, and the common Nasturtium, of sterling value. The Tuberous or Potato Nasturtium, deserves to be more generally known as a tough-constituted town climber. Hops (when not smitten with the plague of aphides) make elegant festoons for the balcony or verandah. Sweet Williams, raised from seed, in spring, in the country, and brought to town in March, will mostly make a gay bed for one season at least. The same of Canterbury bells, several Campanulas, Lychnises, Phloxes, and Pæonies. Sunflowers, white and yellow mallows, ten-week stocks, the Virginian stock, the Clarkias, the Antirrhinums, tall double Poppies, the double Marigold, the Œnotheras, or Evening Primroses, the Candytufts, Sweet Peas, and several Lupines, are acceptable annuals. Where there is room, the Lime is a good town tree, leafing early in spring, and perfuming the air with its blossoms in August, besides attracting the hum of bees; it also bears lopping, clipping, and training well. The Elder *remains* of moderate size, and its bunches of flowers are admirable. The various species of crabs, pears, and apples even thrive the better for the overdose of carbon which the atmosphere of towns contains. Dwarf Apple and Pyramidal Pear Trees, such as may be bought in France for tenpence each, might be

grown in even small gardens, if town gardeners did but understand the mode of keeping them in order, both at branch and root.

Grass is such a staple article in English gardens, and, in truth adds so much to their beauty, that it seems hard to discourage its employment in towns. And yet, what are most of the grass-plots met with there, even with all the expense that is incurred for returfing, sanding, rolling, mowing, and guano? Too often do we behold half-naked patches of ground, like threadbare coats or shocking-bad hats, that you have no pleasure in looking at, and are afraid to walk on. If the blades of grass *will* spindle up, long, lank, few, and far between,—if the roots *will not* tiller and thicken,—it is better to occupy the space with something else, even with a layer of clean bright gravel. Where a strip of green is wanted to run along the ground, as at the foot of buildings, round the base of a pedestal, or as the frame-work of a grass plot that is intended *never to be trodden on*, Ivy answers the purpose well, especially if the band of green is broad. The court of the Louvre, at Paris, furnishes a good example. If a narrow edging is all that is required, the Lesser Periwinkle, *planted thick*, answers well, and will besides show its azure flowers in mild winters and forward springs. Roses are unsuited for towns; the Moss, Yellow, Banksian, and Austrian, especially so. Still, if your site tempts you to venture a few, try the Old White, the Maiden's Blush, the Old Striped Rosa Mundi, the Portland Rose, the Common Pink and Crimson Chinas, Madame Hardy (Bourbon), the coarser varieties of *Rosa Gallica*, Brutus or Brennus, and Aimée Vibert. One of the Boursault Roses, which are vigorous climbers,—for instance, either the Blush Boursault (Calypso), or the Crimson Boursault (Amadis),—trained against a wall with a sunny and airy aspect, will sometimes, and perhaps, allow you to bud other varieties on it with tolerable success. Select the most vigorous perpetual Roses for the experiment. The best mignonette is raised in the country, and brought to its city destination when just

beginning to flower. A professional gardener will take charge of your boxes, and return them stocked with healthier plants than you can raise at home. Violets, pansies, primroses, polyanthuses, anemones, heaths, and double daisies, do not bloom well "in populous cities pent," although they may not quite give up the ghost. Thrift, with its pink blossoms, and London Pride, with its pretty rosettes of leaves, are wonderfully hard to kill. The Lily of the Valley will often come up, spread, and blossom, year after year; so will its cousins, the Solomon's Seals. In not too choked town situations, an interesting branch of gardening may be practised on roofs and the tops of walls, by covering them with stonecrops, or Sedums, white and yellow, Houseleek, wall-flowers, Antirrhinums, both upright and pendulous, orpines, irises, and where continuance of shade is long, with mosses, polypody, wall-rue, cup-moss, and other elegant cryptogamous plants. Even trees will grow on the tops of walls (if the seed can drop into a convenient chink), as the Common Ash and the Mountain Ash.

A difficulty in town gardens is to keep things from being wire-drawn, from running up tall with all their leaves at the top and the lower part of their stems naked, and from stretching out their branches, weak and drooping, to the right and left. Want of light and air, after which the plants are stretching, is the cause of this lank and diffuse habit of growth; but the more it is allowed to go on unchecked, the worse the evil will become. The remedy is, careful and constant pruning, both of the spring and the summer shoots, so as to keep the shrub or tree as dense and compact as possible. Unfortunately, prunings which improve the mass of foliage also diminish the quantity of flowers. In towns, many laburnums, lilacs, Guelder roses, thorns, and almond-trees, which would bloom respectably if allowed to run on and on, flower not at all if they are cut close back. The fact is the result of the situation, and a sacrifice of some kind must be made. Isolated trees and shrubs, instead of being planted in clumps, are less liable to spindling in

town A small greenhouse in town is useful, to receive in winter the shrubs and plants with which the balconies, steps, and windows may be adorned in summer. A pair or two of large American aloes, of orange-trees, pomegranates, and oleanders, in tubs or boxes, may be thus kept in health for years, and will give more style to the aspect of a house than a multitude of little ephemeral flowers in pots. Of course, town gardening is more expensive and requires more constant attention than rural floriculture. The man of business, who has but little leisure to spare, will save much time and trouble (though he will also lose much wholesome mental relaxation), by contracting with a nurseryman by the year for the renewal of his bulbs and bedding-plants. Nor is such the way to economize. But for those who are fully occupied all day long, and who still like to see their little plot embroidered with flowers, although they can only admire their changing beauties as each successive Sunday comes round, the aid of a respectable nurseryman is well worth the consideration of proprietors of town and suburban gardens.

It will cost very little more expense and trouble to plant, instead of the ordinary hardy shrubs and trees, others, varieties of the same species, whose appearance is more remarkable and unusual. For instance, there is the Cut-leaved Alder to take the place of the common Alder. The cut-leaved, variegated, and yellow-berried Elders, though they need not supersede, may thrive in company with the elder of the hedge. The Hazel with dark purple leaves, harmonizes well with the Copper Beech; though, unfortunately, nothing but moss will grow under the shade and drip of Beech-trees. The Weeping Walnut (by no means common) bears excellent fruit, besides making even a more massive tent of foliage than that characteristic tree, the Weeping Ash. There are also weeping elms, sophoras, birches, thorns, acacias, cherries, peaches, and others, from the stature of shrubs to the altitude of timber trees. A pair of Weeping Willows, one on each side of a gateway, or at each corner of a respectable-sized front garden, have a happy effect in

breaking, not too abruptly, lines of building, besides sheltering the mansion from gusty winds, and serving as a blind against intrusive gazers. The Weeping Willow has the advantage of leafing early, and also of retaining its foliage late. Cuttings raised from Napoleon's Willow differ somewhat from those usually grown in England, and have therefore the merit of novelty as well as of historic interest. Magnolias, trained against a wall, will not unfrequently produce their immense, white, powerfully-scented flowers within the precincts of a city, not to mention their evergreen foliage. Another class of materials suitable for town gardens, on account of their highly artificial aspect, are the trees and shrubs with blotched, speckled and mottled leaves,—as ivy, aucuba, syringa, althæas, maples, rhododendrons, and others, making altogether a long list. Some of these variegated plants, being of delicate constitution, require extra attention to their soil and pruning. In England, town trees scarcely receive so much attention as is bestowed on them in Paris, and as, in fact, they well deserve. Along the Boulevards, and in many private and public gardens in the French metropolis, are to be seen fine specimens, both young and old, of a tree called *Ailanthus glandulosus*, which is scarcely ever heard of here, and which, indeed, is by no means common in this country. It is very handsome while still quite young, may be easily made to run up with a tall straight stem before forming its bold spreading head, and, as Dr. Lindley observes, independent of its value as timber, it has good qualities, even in an ornamental point of view, which ought to have saved it from neglect; for it is perfectly hardy, has a most noble aspect, and grows excessively fast. It is a native of the northern provinces of China, and may be rapidly propagated in England from suckers, which it produces freely. The tree had been growing nearly thirty years in this country before its introduction into France; and now, while it is forgotten here, both there and in Italy it is much valued as a tree for shading public walks, and is planted for that purpose, as well as in gardens, together

with the Tulip-tree, the Catalpa, the Horsechestnut, the Platanus, and other large-leaved exotic trees, to whose number the Paulownia may now be added. Loudon's account of the Ailanthus shows how well it is adapted for towns. "Its leaves are not liable to be attacked by insects, which is a very great recommendation; and they continue on the tree, and retain their green colour, till the first frosts in November, when the leaflets drop suddenly off, the petioles remaining on often a week or two longer. The tree grows in any soil, though one that is light and somewhat humid, and a sheltered situation, suit it best. In France, it is said to thrive on chalky soils, and attain a large size, where scarcely any other tree will grow. It is readily propagated by cuttings of the roots."

VILLA GARDENS.

The town gardener is restricted to growing what he can, and must be content to think that he has not laboured in vain if he can make a respectable display of foliage and flowers, no matter of what genera and species, exotic or native. A villa gardener has better opportunities, both as to greater extent of space and more favourable conditions of growth. Still, even he will be controlled by limits and prohibitive circumstances, which he can neither break through nor go beyond. He may not be able to grow yellow roses, nor to make the scenery outside his boundary line subservient to that within it. His next-door neighbours, on either side, may be as opposite as the poles to himself in point of taste. Still, he has much within his reach. A great point in successful villa-gardening, is to carry out well one sole idea. Great variety there cannot be, nor contrast, in the moderate area of ground which most villas possess; but there may be high finish, perfect good taste, choice selection, and manifestation of wealth, science, and skill. To attain this happy end, there must be UNITY OF DESIGN; without it, except by the merest accident, there will be merely a jumbling hotch-potch or chance-medley

salmagundi of gardening, whatever amount of cash and labour may be bestowed on horticultural incongruities. But with unity of design and a leading idea consistently carried out in all its details, failure is scarcely possible; for, even should any blemishes result from accident while laying out the plan or from neglect in the parties who have to realize it, they will be so easy to remedy, when once the object in view is clearly defined, that a stranger will be scarcely aware of their having existed at all.

On coming into possession of an old or neglected villa garden, wait a good twelvemonth before commencing alterations of any importance, even such as changing the line of a gravel walk. You will thus have time to study its original character, and to make what you find growing there take their place in what you propose to do. Often, you will rescue treasures that otherwise would have been destroyed, or thrown out as rubbish. Fig-trees may send up strong shoots, that will produce fruit in a year or two, from stumps that have been cut down to the ground, and left for dead; in damp out-of-the-way corners you may find exquisite moss roses, perhaps the White Bath, or the Pompone Moss; or, some thorny bush that ignorant eyes mistake for a bramble, may be the Yellow Cabbage Rose; choice Tulips, Hyacinths, Anemones, and Dog's-tooth Violets, may spring up and flower from offsets and fragments left by persons who *meant* to have removed the whole original stock of roots; curious perennials, like the Dragon Arum, after being crushed and trodden under foot for years, may gratefully repay a summer's kind treatment by sending up a stem and inflorescence which will be the wonder and admiration of half the parish. In short, with an old villa garden, cultivate it as it is, and wait. Draining, however, where required, can only be productive of good. The same of trenching two-spade deep, or at least somewhat lower than the top spit, which has been cropped perhaps for successive years without renewal. In old gardens, plants that have been lost are sometimes thus

recovered, by bringing up their seeds to the influence of air and sunshine.

If it be your task to make a new one, first ask yourself "*What* style of garden shall we have? To *what* branch of horticulture shall we give our attention? On *which* group of the vegetable kingdom shall we spend our money? *How* shall the exterior of our villa residence look from without and within? Shall we form a little *arboretum*, and nestle ourselves beneath a cluster of some dozen or twenty rare hardy trees? Shall we go into the Dutch line, and gratify our taste for florists' flowers? Shall we make a Rosary, and be content to look a little naked in the winter if we can but have a blaze of bloom during summer and autumn? Any of these proposed plans can be carried out in villa gardening; only—there must be no indecision, no patchwork, half-measures, nor coalitions of opposite aims and principles. There is one apparent exception to the rule; but then it requires both more time and a more daily and assiduous study of garden literature than villa-proprietors can mostly afford. The amateur who, happening to have a sufficiency of land attached to his residence, chooses himself to take the command of two or three labourers, instead of employing a professional gardener at high wages, will adapt his practice to various ends, according as utility or ornament is the object the more desirable in his state of affairs. *His* horticulture is mostly of the composite order; he cultivates a garden of all-work. As the celebrated cobbler "lived in a stall—that served him for parlour, kitchen, and all," so the independent manager arranges a plot of ground so as to comprise the conveniences of orchard, kitchen-garden, shrubbery, parterre, and terrace. And a capital school it is for the men and boys who are wise enough to look after instruction while working in it. How well, too, an avenue of standard perpetual roses harmonizes with the line of a feathery asparagus-bed! How little is there to displease in a rectangular strawberry-ground inclosed in a frame-work of brilliant low-growing flowers, with

an outer fillet of box, having openings left, like the gates of a Roman camp, for the approach of the workmen and the fruit-gatherers! What pleasant strolls may be taken in a wilderness of apple, bullace, cherry, plum, filbert, and medlar trees, with an underwood of periwinkles great and small, honesty, and primroses, and with one path at least skirting the edge of the fish-pond, from which a pike for dinner may always be had! His visitors enjoy the combination as much as himself. He asks a city friend *which* he will have put into his carriage—a basket of flowers, or a hamper of vegetables;—and the answer is, "Both!" But, after all, this form of gardening is more practicable at the country parsonage, the wealthy farmhouse, and the mansions of our minor aristocracy, than at the villa proper. Nor can it be called a style devoid of design and principle; for it is eminently the utilitarian and experimental style of gardening.

A very eligible garden for English villas is the winter garden, or garden of evergreens, with a large proportion of grassy slopes and lawns. It by no means excludes gay flowers in summer; but they must be such as either entirely disappear in winter, or mark their positions by tufts of green leaves. Standard and pillar roses can, therefore, be but sparingly admitted; whilst hollyhocks, pæonies, dahlias, bulbous flowers, and the whole legion of annuals, must be pressed into the service, without the least scruple of overtaxing their powers. Very telling winter clumps may be made of brilliant-berried shrubs,—pyracanthus, snowberry, the *wild* Guelder rose, the barberries evergreen and deciduous, the spindle tree, the mountain ash, and the yew. A sufficiency of scarlet or fancy* geraniums and verbenas may often be nursed in the house, on window-sills, to supply a few beds on the lawn, and to take the place of the early spring bulbs. Still, the show from November to March is the main point to be attended to. There may be chrysanthe-

* See "Fancy Geraniums; a Practical Treatise" (3d.), by Thornhill and Dickson, Nurserymen, Bristol.

mums, and common pink and crimson China roses, in beds, and isolated plants of the Double-blossomed Furze and the Dwarf Almond. To fringe the belts or clumps of laurel and laurestinus, you may have Colt's-foot, the scentless-white and the heliotrope-scented, and the pink buds of that little bright-blue flower, which is often miscalled Forget-me-not. Ilexes, and, near the sea, even hoary cork-trees may be grown in England. The good old varieties of Holly ought to be held in reverential esteem. On the arbutus, fruit, flowers, and foliage, all court approval at once; rosemary and southernwood will glitter with the dew of a wintry forenoon, at the back of a mass of the white Christmas rose and the green-flowered hellebore, fringed irregularly with the dwarf golden blossoms of the Winter Aconite. As the season advances, a bed of *Erica carnea* will be thickly covered with rosy blossoms; and then will follow Snowdrops, Hepaticas, Van Thol Tulips, Hyacinths, Vernal Squills, and a host of other pretty things. Primroses make a lively bed in spring; in many woods, on a moory black soil, the self-sown primroses will sport into a great variety of colour; hardly two are to be found alike. They pass from bright sulphur, through sad-coloured neutral tints, to orange, lilac, and vivid crimson. It is easy to have a bed filled with the proper soil, to search for or procure specimens, and transfer them to their final site. The mixture of a few choice plants from cottage gardens, adds brilliancy by their more decided hues; but the best effect is obtained when the primroses are taken quite at random. Patches of Pulmonaria, or Lungwort, with leaves of mottled green, and flowers changing from pink to blue, are not to be despised in a spring garden; nor are the single blue Russian and double pink Neapolitan Violets, the Wood-laurel, the Pyrus Japonica, and Wall-flowers, double and single, yellow and brown. Something actual may be thus accomplished to elicit a smile from the grimmest of the seasons.

Country-houses have sometimes damp, shady courts and nooks, intermediate out-door dens between the back-

yard and the garden, which puzzle the owner what to do with them. They are too much in everyday sight, as well as too damp to hold either firewood or tools, or domestic animals,—and to what other purpose to turn them, he cannot tell. Such a corner will often make a capital FERNERY, where a curious, beautiful, and mysterious Natural Family of Plants may be cultivated. The British ferns alone will furnish a number of handsome hardy species,—though *all* British ferns are not hardy. Persons inclined to adopt the suggestion, will be aided by the study of "Sowerby's Ferns," or the magnificent "Ferns of Great Britain, Nature-printed, Life-size." "Lowe's History of Ferns, British and Exotic," is also in the course of publication.

An essential convenience is thus pointed out in Paul's clever "Hand-Book of Villa Gardening:"—"Much of the comfort and enjoyment in a garden depends on the state of the WALKS. Their formation may appear a simple matter, but it is one that requires attention. In wet and retentive soils, the earth should be removed to the depth of a foot or so, and a foundation laid of broken bricks, rubble, or coarse gravel; over these successive coats of finer gravel may be laid, keeping the centre of the walk slightly raised, and contriving a fall when possible, that the effects of a heavy shower may the more speedily pass away. It is very pleasant to be able to traverse the principal walks of a garden with comfort five minutes after a spring shower, and there is no reason why this should not be done, if they are properly contrived."

Country Gardens, or those adjoining the country seats of wealthy families, are often on a magnificent and even a royal scale. In British gardens of this class, the acme of horticultural perfection is attained. Their management is intrusted to able and experienced persons, who have no need of admonition from a book like this; on the contrary, it is from their practised intelligence that its writer is too happy to learn. Without further preface, therefore, a summary shall be given of Bulbous Flowers, Tuberous and Rhizomatous Flowers, Herbaceous Flowers,

Shrubby and Sub-shrubby Flowers, Annuals, and Flowering Trees. In addition to the necessaries required for Kitchen Garden use, the florist must have a stock of various soils, in assortments, as leaf-mould, heath-mould, silver-sand, hazel-loam, the materials of old cucumber-beds; besides a hotbed in spring, cool frames, and a small greenhouse, if possible; a cellar for roots and plants in winter, a shed in which to pot plants and keep seeds and bulbs, plenty of flowerpots for the rearing of bedding plants and cuttings, shallow pans and boxes for raising seedlings, stakes (of wood, not iron) to support Dahlias and Standard Roses, and, whatever else may be added to the list, a small library of the best works on Horticulture.

BULBOUS FLOWERS.

A bulb is a very complete and simple form of vegetable existence. To the question, "What, amongst plants, constitutes an individual?" the most generally received answer is, "A bud is an individual;" so that an oak-tree is a collection of individuals, something as certain corals are a collection of polypes. Now, a bulb is a bud on a larger scale. The buds that are formed and drop off from the junction of the leaf and the stem in certain lilies, are miniature bulbs. Bulbs enjoy the advantage of being more independent of a fixed residence in the soil than many other plants. During their period of rest, they may be kept out of the ground, be made the subject of merchandise, and be transported to very considerable distances. Meanwhile their vitality is still in full force, and important changes, such as the formation of the future blossom, is going on within them. In due time, they again require the nutriment supplied by the rains and the earth; just as an animal that has lain torpid all winter, seeks his food on awakening in the spring. The capability of propagation by offsets is another point of interest belonging to bulbs. Young progeny, exactly resembling the parent plant, are thus produced with certainty. Bulbs often are the subjects

of the first attempts at horticulture by juvenile gardeners; and are occasionally the only means by which city residents can gratify their taste for growing flowers. By far the great majority of bulbs produce exceedingly handsome blossoms, often odoriferous and even highly-scented. As a general rule, too, they are early rather than late in their season of flowering, and readily susceptible of forcing by artificial heat. They are well adapted for pot culture, for at least one season; the next, they may be returned to the open ground, and replaced by others to succeed them in the greenhouse or the parlour window. Bulbs produce annually only a limited number of leaves; if these are destroyed, they are not reproduced, as is the case with most trees, shrubs, and herbaceous plants. Consequently, the leaves of bulbs must be carefully protected and preserved during the whole period of their growth, both before flowering and after; otherwise, the plant will suffer from the failure of those functions which all leaves perform. Bulbs are solid, like the tulip; coated, like the hyacinth and the onion; and scaly, like the white and the orange lily. For convenience, bulbous flowers are here arranged in alphabetical order, which will be adhered to for the plants in other sections.

Agapanthus umbellatus or *umbelliferus*.—A striking plant, which is too much confined to the greenhouse, inasmuch as the lovely blue of its handsome head of flowers only attains its fulness in the open air. The Agapanthus is only half-hardy in England; and though it may be permitted to remain throughout the winter in the open ground, under a covering of litter or leaves, it must always be at a risk. It is safer to keep the bulbs in pots (which must be large) in good, light, rich soil. At the beginning of June, these pots may be sunk in a bed or along a border, being liberally supplied with water in hot dry weather. Where there is a good stock of bulbs in hand, half may be ventured in the garden, and half retained in pots, to be removed into a cold frame for the winter. Flowering commences in July, and con-

tinues during the summer if the plants are indulged with plenty of water, of which they are greedy at that time. Propagate by division of the bulb, planting the offset immediately. Seedlings (to be sown on peat-mould) will not come into a flowering state before their fourth year at soonest. Damp is the great enemy of the Agapanthus during its dormant period. Plants, therefore, to remain out the winter must have a well-drained situation.

Amaryllis.—A showy genus, belonging rather to the greenhouse than the garden. They require a strict observance of the periods of growth and rest, and careful attention to the health of their *foliage*. While dormant, moisture is fatal to them; at the same time, in our latitude, a mild insular climate suits them best. The *A. belladonna* is greatly admired for its large pink sweet-scented flowers, which appear from August to October. A difficulty is, that it succeeds better in a border than confined in a pot, and that the leaves do not appear till after the flowers, and are liable to destruction by early frosts in any but the most favoured spots, such as South Devon and the Channel Islands. The bulbs of this species are not fond of being disturbed too often. Once every three or four years is quite enough for the separation of the bulbs and the renewing of the mould. Plant in light soil containing a few calcareous ingredients, at the depth of four or five inches. Thorough drainage, and covering with mats or sashes at the approach of anything like severe weather, are indispensable.

Colchicum autumnale—Meadow Saffron, or Autumnal Crocus; in French, *Tue-chien*, or kill-dog.—A native plant found abundantly in many moist pastures on heavy land, but of sufficient curiosity and beauty to be admitted as an ornamental bulb. The peach-blossom tinted flowers, resembling the crocus in shape, appear in autumn; but they may really be considered as very early, forestalling the spring, instead of late, for they are duly followed by the leaves and the seed-vessel, which rise with the approach of genial weather. Indeed, so precocious are the flowers, that they appear before the

bulb has quitted its dormant state, as far as the emission of roots is concerned. Thus, the Colchicum will send forth its succession of blooms, while lying in a basket, on a window-sill, or in a China dish, without the contact of a particle of earth, to the great astonishment of the inexperienced. When the flowering is over it *must* be planted. An objection to it is, that its foliage is coarse and cumbrous in proportion to the amount of bloom displayed; but this may be remedied by making the bulbs *leaf* in a reserved ground, to bloom where wanted. Some use them as an edging. There is a double variety. The plant must be regarded as poisonous, though it furnishes a medicine of questionable value. Quite hardy; not nice about soil, but preferring moisture.

Crocus.—The welcome harbinger of returning sunshine and cheerfulness; although one species, *C. satirus*, or saffron, flowers in the autumn, and is cultivated for culinary and medicinal purposes rather than as a garden plant. The genus is large; a few species only are desirable for the parterre, the Alpine crocuses having mostly insignificant flowers, although interesting in other respects. The yellow crocus, *C. luteus*, is a general favourite; but requires a bright sunny day for its perfect expansion. The Cloth of Gold, *C. Susianus*, which has been put forward to rival it, is far inferior. *C. vernus* includes many shades between lilac and white. Crocuses are employed either as an edging, in separate tufts along the border, or to form geometrical patterns, and even coats of arms, in combination with hepaticas, snowdrops, bands of gravel, chalk, small coal &c. &c., on a smooth grass-plat. Such devices may be made to accord well with the formal and architectural style of gardening; but their effect is scarcely appreciated on the level ground. It must be seen from a first or second-floor window. In landscape-gardening, *C. vernus* may be employed as a charming decorative adjunct if profusely and irregularly planted beneath clumps of tall trees, perhaps in combination with snowdrops and winter aconite, in such a way as to imitate a particoloured carpet

spread by the hand of Nature herself. In parterres, the species are better kept separate; that is, at least in separate patches or rows, because they do not all flower exactly at the same time. Thus, the bright yellow blooms before the white and the purple; and if their combined effect is counted upon, disappointment will mostly ensue. Crocuses, in general, like a light, moist soil. Plant them in September, at the depth of from three to four inches, and take them up for division and transplantation every fourth summer at longest, after the leaves are completely withered. The reason is, not only that by multiplication of offsets they become too crowded to bloom well, but that every year new corms (as these solid bulbs are called) are formed above the old ones, and in course of time rise to the very surface of the ground, the inconvenience of which in a garden is obvious. In a state of nature it is otherwise. In the Alps, wild crocuses are abundant in swampy hollows into which the brooklets, caused by the melting snows, bring with them a small but perceptible deposit of mud. This thin layer is, of course, annually repeated, and a stationary bulb would in a few years be buried beyond the power of vegetation. It is, perhaps, not too much an indulgence of fancy to believe that the upward progress of the corms is an adaptation designed to enable them to keep pace with the gradual elevation of the soil in which they are rooted. Although several species seed freely, the usual mode of propagation is by offsets. After flowering, be careful to leave the foliage perfectly uninjured until the full period of its natural decay. To avoid the inevitable incumbrance of these leaves in small gardens, it is not a bad plan to form beds or baskets of crocuses in plunged pots, which may be removed to give place to other flowers. The same mode of shifting and succession is applicable to many other bulbs, and only requires a little industry to carry out.

Crown Imperial—Fritillaria Imperialis.—A coarse, though bold and showy flower, welcome in April for its erect stem, a yard or more high, and the decided charac-

ter of its foliage, in spite of the offensive fox-like smell which it exhales in sufficient force to justify its banishment to the most distant part of the parterre, or even to the shrubbery. The colour of its flowers varies from a light sulphur-yellow to a deep orange-red. Such varieties are obtained from seed sown as soon as ripe. The Dutch or large-belled crown imperial, *F. maxima*, deserves special notice on account of its height, and for the number, size, and beauty of its flowers. Like other fritillarias, the crown imperial thrives best in a light, well-drained soil, containing a slight admixture of chalk. Protect in early spring from snails and slugs. Every third or fourth year, when the bulbs are too crowded, take them up for division at the end of June. Replant, at no long interval, at the depth of eight or ten inches; immediately is better, if you wish for flowers the following spring.

Daffodil—Narcissus pseudo-narcissus—"which comes before the swallow dares, and meets the winds of March with beauty," has several double-flowered varieties; but perhaps the most pleasing and elegant of all is the original wild flower which grows in humid pastures, from which it well deserves promotion to the garden. All the care the daffodil requires is to be taken up at intervals of several years, and to be protected from the ravages of ignorant jobbing-gardeners who, for neatness' sake, as they call it, will cut off the rank green leaves after the plant has done flowering. Neatness, in moderation, is a virtue. In this case, the price at which it is purchased is the absence of flowers the following spring. In the outskirts of London there are innumerable tufts of daffodils which year after year produce nothing but leaves.

Dog's-tooth Violet—Erythronium dens-canis—is not a violet at all, though it is an exceedingly pretty little plant, which in addition to its pinkish flowers, has remarkably handsome mottled leaves. Although of quite as easy culture as other spring bulbs, it is not so abundantly met with as its merits would seem to imply,

probably on account of its not being particularly prolific of offsets. This graceful flower, a native of the Alps, has the divisions of its corolla turned up like those of the cyclamens. The tint varies from white to pinky-purple. Prefers light soil. The American species, *E. Americanum*, has yellow flowers, and requires the same culture, *i. e.*, to be taken up every two or three years. It has a tendency to run to offsets instead of flowers, which is best obviated by planting in light peat soil, such as would be used for heaths and rhododendrons.

Fritillary—Fritillaria meleagris.—Chequered Lily or Chess-board Flower,—is a native, hardy, and early-flowering plant, whose grass-like leaves and pendulous flowers render it a general favourite. In tint, it varies considerably, from greenish white to dark dull purple. In well-drained soil, the roots may remain for a succession of years without removal or protection. The Persian Fritillary, *F. Persica*, a larger species, is more delicate, requires a lighter soil, and the shelter of a cold frame or greenhouse in winter.

Garlic.—Several species of *Allium* are grown as border flowers; *A. Moly*, with golden-yellow flowers, of which there is a white variety, being the most generally cultivated. There are also white and pink-flowering species. One parodoxical Garlic, *A. fragrans* or *odorum*, is agreeably scented. They are showy, increase rapidly by bulb, prefer a warm dry light soil, and require no further care than separation every second or third year. Their generally offensive odour would seem to render them unfit for the flower-garden, whilst their gay appearance suggests their employment in tricks on inexperienced admirers of flowers. *A. Moly*, however, does not prove disagreeable in large bouquets which are only to be looked at without being handled.

Gladiolus—Corn Flag.—The wild European species, *G. communis*, is perfectly hardy in England, and delights the eye in summer by its tapering spikes of bright red flowers. The bulbs are corms like those of the crocus,

and only require separation and replanting at intervals of several seasons. Of late years, several foreign and highly ornamental species of Gladioli have been introduced, and from these not a few showy hybrids have been raised. They are all more or less tender, safest under pot culture or in raised beds covered with shutters or sashes in winter, requiring light soil and the complete absence of moisture during their period of rest. If ventured out in the open ground, they must have a well-drained spot, and be covered in winter with six inches of dry litter, sawdust, or withered leaves. Established thus, they bloom magnificently; but there is always the danger that some unusually severe frost or extraordinary continuance of cold and wet may destroy the whole collection. Deservedly admired species are *G. cardinalis, psittacinus, grandiflorus, gandavensis, blandus, versicolor, Colvillii,* and *ringens,* besides varieties and hybrids too numerous to specify here.

Guernsey Lily—Nerine Sarniensis.—A native of Japan. It is an old story that a ship homeward bound from thence was wrecked on the Guernsey coast, where the Asiatic bulbs have ever since thriven so well as to be objects of export. The plant produces in autumn a head of eight or ten bright red flowers. Afterwards, the bulbs are mostly thrown away, from the difficulty of getting them to bloom afterwards, or even to survive. The care and appliances they would require to perfect their foliage are mostly bestowed on more valuable plants. Indeed, they are hardly worth the trouble they give. They are pretty, and that is all. Plant the bulbs, as soon as they arrive, in pots of sandy loam, in the sunniest part of the greenhouse.

The Hyacinth—Hyacinthus orientalis.—There are three modes of growing hyacinths; in glasses, in pots, and in beds. The former may be speedily dismissed; for the powerful and headache-causing odour of the flowers renders them unsuitable for living rooms, except in small numbers in vast apartments. Early hyacinths are more agreeable as decorations for the entrance-hall,

the glazed corridor, the balcony, the greenhouse, or the saloon and occasional reception-room. The only satisfaction to be derived from bulbs in glasses is the power of beholding the roots, and of watching their descent in the water. Otherwise, the plant, as it grows, becomes a wretched unsteady thing, even when supported by wires, for want of its natural foot-hold in the soil; it is exhausted and nearly worthless for the following season; and the practice might be reprehended as a flagrant case of cruelty to flowers, if such an offence were recognised by society.

Forced hyacinths, in pots, are deservedly general favourites; and the more gently they are forced, the more slowly they are brought forward, if only by the temperature of an ordinary sitting-room and full exposure to the sunshine in the window, the better-grown will be the specimens. This, too, will allow of the pleasure of noting the development of the rising flower-stem. If the perfected bloom exhales too oppressive a perfume, it can then be removed to ornament a cooler part of the house, which will protract the duration of its beauty.

The hyacinth strikes its roots vertically downward to a depth which is considerable in proportion to the diameter of the bulb and which is greater than the height of flower-pots usually allowed to roots of that size. The idea therefore suggested itself to manufacture tall cylindrical pots, of narrow diameter, expressly for growing this flower; and lovers of hyacinths will do well to make use of them. In an ordinary garden-pot of sufficient depth (not less than ten or eleven inches), a clump or knot of hyacinths of different colours may be grown. Three is a good number to constitute these bouquets, whether in pots or in the open border; and the permutations and combinations that may be worked out in this way with the different colours of white, blush, pink, pale yellow, red, porcelain-blue, deep blue, violet, and dark purple, afford a varied scope for the amateur's taste to exercise itself. One point must not be forgotten in respect to hyacinths; some of the single varieties are even in higher esteem than the double; moreover, they

come earlier into bloom. Therefore, to produce a good effect, the knots should consist of all single or all double flowers, that the members of the group may bloom simultaneously. Even in beds, it is strongly advisable to keep the double and single flowers separate. For a general collection, it is better to have two beds than one; otherwise, some specimens will be beginning to fade before others have attained their beauty.

It is usual to begin hyacinth-growing by the purchase of imported Dutch bulbs in September. After a collection is formed, it will be found necessary to draft in annual reinforcements from abroad, because certain varieties and colours multiply much more rapidly by offsets than others; so that, in a year or two, the amateur will find himself over-stocked with one kind, while others run short. The former he may give away, or turn out into the open border; for the latter he had better apply, and that in good time, to the nurserymen who import. Respectable dealers may be depended on to furnish a good article of genuine Dutch origin.

The soil for hyacinths is a compost, prepared beforehand, consisting of light loam, leaf-mould, river-sand, and well-rotted dung, in about equal proportions. It does no harm if the sand rather predominates. Put two or three crocks at the bottom of the pot, fill it neatly full with the soil which has already been well incorporated; give the pot two or three gentle taps on the ground to settle its contents, place the bulb in the middle, press it down a little with the fingers, and then add just so much compost, that one third of the bulb shall remain uncovered. Not only do the hyacinths do better in pots when the upper part of the bulb is thus left exposed, but the basis and origin of the flower left visible becomes itself an ornament, having its own distinctive complexion and features visible to the observant eye. It is said that one of the great Dutch growers could recognise two thousand varieties of hyacinth *by the bulb*. After potting, give a good watering, and let them stand under some shed or other sheltered place for three or four days. Small

growers may then remove them to the cellar or the cold frame (covered with matting), to remain there till the central bud has started from a quarter to half an inch, when they must all be exposed to light and increased warmth. Before that state of advancement, small batches of half a dozen or more, may be brought forward to be hastened in the hotbed, or the parlour window, as required, in succession. Large growers, such as Messrs. Henderson, of the Wellington Nursery, St. John's Wood, place their potted and watered hyacinths in beds five feet wide, and throw old tan over them, to the depth of five or six inches; and this is allowed to remain until the pots are quite full of roots, and the tops have made a growth of one or two inches. Sand, instead of spent tan, has been occasionally employed for the same purpose, and is a convenient substitute in many localities. They are then carefully looked over, and any that are not sufficiently rooted are replunged. Great care should be taken that they are not left in the tan, or sand, too long; if they remain there till the leaves begin to open, the flower is very likely to be injured. Such as are well rooted are placed in a cold frame, where they can be securely protected from frost, and have plenty of air at every opportunity. If flowers are wanted early in the season, a hotbed is prepared with dung that has been well worked previous to making up the bed. As soon as the hotbed is sufficiently sweetened, a few pots are put into it every week, to keep up a succession from Christmas till March, at which time the others will be coming on quite fast enough in the cold frame. Although most hyacinths succeed very well without artificial heat, many are greatly improved by it. Indeed, all that do not bloom kindly in the cold frame will be benefited by applying dung-heat. The bulbs that are kept in the cold frame all the winter from the time they were taken out of the tan are generally in finest bloom from the middle of March till the second week in April. After that, they begin to decline.

Hyacinth-beds should not be *more* than five feet wide,

for the convenience of reaching as far as the middle, though they may be any size less, according to taste. The length, also, is arbitrary; the owner of a large collection of bulbs will judge for himself whether the most striking effect will be obtained by a single long bed, or two or three short ones side by side. When the ground is marked out, excavate the soil to the depth of four feet, if it is naturally cold and clayey, and throw in a bottom stratum of shingle six inches thick, for drainage. On light soils, three feet is sufficient, and the shingle may be omitted. Fill with compost the same as for pot culture, till it is two or three inches above the level of the earth. On the surface of this, place the bulbs, in quincunx order, in rows six inches apart, six inches from plant to plant, and cover them with an additional three inches of compost, which may contain a larger proportion of silver sand than the bed itself. In this case, it would be dangerous to allow the upper portion of the bulb to be exposed to the air, unless the bed were made in a conservatory, under glass, or even in a good-sized oblong cucumber frame, which, with a little contrivance and taste may be made to serve as a temporary hyacinth-house, and contain a pleasing collection of choice specimens. A bed made as directed above, will, even after settling, be raised two or three inches, and will be kept neat by some provisional edging of wood, iron, or earthenware. Box is not advisable, as harbouring slugs.

Another mode: instead of excavating the soil to receive the compost, simply break it up well to the depth of a foot or eighteen inches, and thereon raise a mound of compost of the required length and breadth two feet high, keeping it together by walls of thick green turf well flattened and beaten together by the spade, and fastened, if need be, with pegs of osier. On the top of this mound plant your hyacinths. Advantages are, that the flowers are brought nearer the admirer's eye, as if they stood on a low table, and that the cultivator is spared much painful stooping when he plants and takes up the bulbs and ties the top heavy flower-stems to sup-

porting sticks. On the other hand, a mound-bed requires frequent and regular watering; is more exposed to gusts of wind, and therefore stands in greater need of the protection of an awning during the period of flowering; and is also more liable to injury from frosts of unusual severity. Still, this method of cultivation introduces a pleasing change to the every-day routine of flower-beds on the ground level.

The arrangement of the colours of the respective bulbs admits of the exercise of individual tastes. A common plan is to contrast the tints of every two adjacent blooms; never to let blue stand close to blue, nor red be next-door neighbour to red. Others make each of their four or five rows to consist of various shades of the same colour. Mere chance-medley planting, taking the bulbs at hazard as they come to hand in the basket, will often, as in the kaleidescope, lead to brilliant combinations. A rich effect is obtained by following the order of the prismatic spectrum; *i.e.* let all the flowers at one end be dark purples and violets, and at the other dark reds. Let the purples be followed by blues and light porcelains, till you come to whites. Next the whites, should follow the yellows; after them pinks, then full reds, and then dark crimson. Were there such things as green-flowered hyacinths, they would come between the yellow and the blue, displacing the white, which might be divided to form a bright termination at each end of the bed.

When the flowering is over, withhold water, and remove the awning, if one has been used. The leaves have now to fulfil their office, and must be aided by plenty of air and light. The single hyacinths will probably form seed-vessels. If these are not required for the interesting though patient task of raising varieties from seed, or if it be feared that they will exhaust the bulb too much, do not cut off the flower-stem,—an operation which might cause the bulbs to rot,—but pick off the berries one by one, leaving the stem standing. When the leaves are brown and dry, the bulbs may be taken up; the soil, dead fibres, &c., removed; and then the bulbs should be

laid with the offsets in shallow boxes, divided into compartments, labelled with the names, or numbered according to the grower's private catalogue. Baskets are even better than boxes, but they occupy more room, as their division into separate compartments is not so easy. They should be looked at at least once a fortnight, to cut out or reject any rotten bulbs, or rotting spots. As the time for re-planting advances, many offsets will come away easily, which would have been difficult to separate at an earlier period. A dry airy shelf is a good place for keeping them. Pot-grown bulbs must be subjected to the same treatment. It is not advisable to grow the same bulbs in pots two successive years; but very good blooms may be obtained from bulbs grown in pots and beds every alternate year. For exhibition or extra-fine specimens, it is usual to rely most on imported roots. The offsets must be planted in a bed by themselves, a little earlier and in somewhat richer soil than the full-grown bulbs. In one, two, or three years, according to their size, they will take rank with adult plants. For hyacinths in the open border, taking up every second or third year is sufficient. For seedlings, when the capsule turns yellow and splits, the seed is ripe. Sow immediately broadcast on a bed of light rich mould, into which none but thoroughly rotted manure is admitted. Over the seeds sift an inch thick of light soil. Protect from scorching sunshine and drenching rains; and in winter, cover with mats during frosty weather. When the young leaves wither, weed and gently scratch the surface of the soil, and sift over it another inch of light rich soil. Pursue the same treatment the second season. The third summer, take up the bulbs and replant them as if they were offsets or flowering bulbs. The fourth year, they generally bloom, and the fancier may look out for a prize or two.

Good Single Hyacinths.—Whites: *Voltaire, Emicus, Anna Maria, *Grand Vainqueur, Molière, Reine Blanche, Hercule, Hélène, Thémistocle, Virgo, Mercure. *Yellows:* *Prince of Orange, Héroine, Roi des Pays Bas, Alida Jacoba, Anne Caroline, Jupiter, *La Pluie d'Or.

Reds: Mars, Van Speyk, *Felicitas, *L'Ami du Cœur, Herstelde Vreede, Amphion, Sappho, Cochenille. *Blues:* *Grande Vidette, Emicans, *Nimrod, *Vulcan, Robinson, *Emilius, La plus Noire, Grand Lilac, Bolivar.

Good Double Hyacinths.—Whites: *Vestal, Sphæra Mundi, Anna Maria, Gloria Florum, Mathilda, *Triumph Blandina, *Minerva, Hermann Lange, Montesquieu, Sultan Achmet. *Yellows:* *Ophir, Crœsus, Louis d'Or, Bouquet d'Orange, Jaune suprême, L'Or végétale, Duc de Berri d'Or. *Reds:* Boerhaave, Bouquet tendre; Flos sanguineus, Gloria Solis, Rex rubrorum, *Grootvoorst, Wellington, *Waterloo, Panorama, Madame Zootmann, Honneur d'Amsterdam. *Blues:* Othello, *Pasquin, Roi des Pays Bas, *Globe céleste, Globe terrestre, *Noir véritable, Bonaparte, Alamode, Laurens Koster.—A very small collection should include those marked with the asterisk.

Hyacinth, Grape—H. Muscari, or *Muscari moschatum* —bears a small spike of almost globular dull-violet flowers. Perfectly hardy, and may be left to take care of itself; but hardly worth admittance into the flower-garden.

Hyacinth, Monstrous—*Muscari monstrosum*—does not deserve the honour of a specific name, being sterile, and only capable of propagation by offsets. Instead of a spike of flowers, it puts forth something like a frizzled wig in disorder, of a dull rosy-purple tint. Void of all symmetry and purpose, it can find favour with few but lovers of abortions and curiosities.

Iris.—A large genus, comprising bulbous, tuberous, and fibrous rooted species. Of the bulbous kinds, acknowledged favourites are, the Persian iris, *I. Persica,* a low plant, which in March or April sends up, on a stem shorter than the leaves, a single, very powerfully sweet-scented flower, washed with blue on a light ground. Does better in a pot under a frame, in the same compost as is used for hyacinths, than in the open ground. Is propagated with difficulty either from seeds or offsets, but the bulbs may be annually obtained of the nursery-

men who import Dutch roots, and may be forced if required, like hyacinths. The Scorpion Iris, *I. alata*, a native of North Africa, produces in early spring two or three sweet-scented bright blue flowers on a very short stem. A curious and striking plant requiring the same culture as Cape bulbs (see *Ixia*). Two other bulbous species, *I. xiphium* and *I. xiphioïdes*, are by many regarded only as varieties of each other. The former is known as the Spanish iris, of a great diversity of tints; the latter as the Spanish, Portuguese, and English iris, in still greater variety, sufficient to form a handsome collection and produce a brilliant effect when grown together in a bed. They flower towards the end of June, and are often thought to deserve an awning, like tulips and other choice florists' flowers, to perfect their bloom and prolong its duration. In other respects, too, bulbous irises must have a similar treatment; namely, as soon as their foliage is withered, they must be taken up, have their offsets removed when sufficiently dry, and be replanted in October, or better in September. A light sandy soil agrees with them best. Seedlings, which will generally produce varieties, may be obtained as directed for hyacinths. Six or seven inches every way is a sufficient distance for the adult bulbs in a bed. The Spanish iris, though quite hardy as a border flower, must be taken up at least every third year, in August, to be divided and replanted in September. If kept out of the ground much later, the blooms for the following season will fail. The reason which requires them to be taken up, is that new bulbs are annually formed beneath the old ones, and would finally burrow so deep as to perish. The plant, therefore, in a wild state, is suited for the shoulders of steep hills, where a slight portion of the surface soil is carried down to the valley every year.

Ixia.—A lovely genus, delicate and brilliant, of low stature and slender growth. Unfortunately for us, their native home is a southern region, warm and dry, in comparison with which their English exile is damp and chilly. In the greenhouse, especially on a shelf near

the glass, Ixias thrive at their ease; in the garden, they can only be grown in favoured spots by fanciers who will bestow on them all the care and attention exacted by tender pets. Devoted cultivators of Cape bulbs will study Monographs, Treatises, and Transactions, too voluminous to be comprised in the present syllabus. All that there is room to state here is, that their periods of growth and rest must be carefully alternated and attended to; that a wet sub-soil below and frost and heavy rain above are fatal; that their general soil is a mixture of peat-earth, leaf-mould, and light sandy loam, slightly enriched with the thoroughly-rotted dung of an old hotbed; and that, if grown in the open border, their bed must be an excavation properly filled, or better a raised pit built with walls of brick or turf, screened by a south wall, filled with light compost, and capable of being protected by lights or shutters, occasionally by both. Various other expedients may be tried, such as a stratum of dead leaves in winter, oiled canvass coverings, thatchings with straw, &c., if the roots be ventured out of doors; but the truth is, that, here, their proper place is under glass, in pots with a stratum of small shingle at the bottom, in which, according to size, more than a single bulb may be planted. Indeed, the bulbs are mostly so small that a great many of them would be lost by out-door culture in beds. Their treatment is much the same as that of the African gladioli. October is the time for planting. The bulbs may remain two years without shifting; but in that case, as soon as the bloom is faded, the pots must be kept in a dry situation. Ixias are propagated from offsets. Seedling plants often furnish pretty varieties, which generally flower the third year. *Ixia bulbocodium* is the only European species. The others are numerous and in great diversities of colour; *I. crocata*, the orange ixia, is one of the commonest; *I. polystachya* is a favourite with the Dutch. Persons desirous of growing ixias and the families of plants related to them, will gain practical information by visiting the collections and studying the lists of nurserymen.

Jonquil—Narcissus jonquilla.—So called because its leaves resemble those of a rush, in Latin *juncus*, in French *jonc*. The jonquil is a favourite pot-plant for spring forcing, partly from the good grace with which it submits to such treatment, but mainly for its slender foliage and its bright-yellow odoriferous flowers, whose perfume, however, is even too penetrating for many persons to bear in a room. The jonquil, like most of the other narcissi, is a native of low meadow-lands, and likes an abundant supply of water during its growth and flowering. Plant in September in any good garden soil. In the open border, take up the bulbs every two or three years; but double jonquils should be taken up every year, to prevent their degenerating. Be as scrupulous with them as with daffodils and crocuses, never to let the leaves be cut off because the gardener thinks it makes them look smarter, till they have perfectly fulfilled their office of ripening and returning the sap to the root. Single jonquils will furnish seed, but the quickest way of propagation is by offsets. Importers of Dutch roots will supply you with a stock at a moderate price, which, if you take care of them, will last you your life.

Lily—Lilium.—A large genus, of great beauty. The common White Lily, *L. candidum*, has been grown in gardens from time immemorial; it has blotched-leaved and striped-leaved varieties. The Orange Lily, *L. croceum*, a native of Austria, may be found in almost every cottage plot of flowers, where it amuses the children by smearing their noses, when they go to smell of it, with its yellow pollen. The Tiger Lily, *L. tigrinum*, from China, where its bulbs are eaten, has handsome orange-red flowers speckled with black, and is remarkable, though not singular, on account of the numerous little bulbs which are produced along the stem at the foot of each leaf. The Martagon, or Turk's-cap Lily, *L. martagon*, from the Alps, has an unpleasant smell emitted by its numerous dull purple flowers, spotted with small black dots; but its colour varies. The Scarlet Turk's-cap, *L. calcedonicum*, is handsomer; while the Yellow Turk's-cap,

L. Pyrenaicum, offers the curious contrast of yellow petals and scarlet anthers. The Canada Lily, *L. Canadense*, bears numerous yellow flowers. All these are quite hardy, and suited to the open border. The Tiger Lily is most vigorous and beautiful when growing in heath-mould. For the others, ordinary garden soil will do. Every third or fourth year, take up the tufts of bulbs, separate and plant them at once at the depth of three or four inches. Although they will travel to a distance, if required, they will flower not so well, or not at all, next spring, if kept out of the ground too long. The Bulbiferous Lily, *L. bulbiferum*, from the Alps, is also hardy, but is a less showy plant than those already mentioned. The Dwarf Lily, *L. pumilum*, appears to be only a variety of the common Orange Lily, is more delicate, and requires a light and sandy soil. The Pompone Lily, *L. Pomponium*, from the Pyrenees and Siberia, the dark red divisions of whose corolla turn back so as to form a sort of turban, prefers light fresh soil from a pasture, a shady situation, and, like most other Alpine plants, is all the safer for protection in winter, to imitate its native shelter of snow.

Species requiring a little more pains to cultivate are the Philadelphian Lily, *L. Philadelphicum*, a charming plant, about two feet high, which must be kept in a half-shady spot, potted in heath-mould, to prevent the loss of its offsets, which run underground. The Superb Lily, *L. superbe*, must also have heath-mould and protection in winter, although at home, in North America, the frosts are severer than with us. So it may remain, to be taken up and replanted every third or fourth year. Although thriving better for a certain amount of shade, it is apt to damp off and rot in wet situations. The Carolina Lily, *L. Carolinianum*, also requires heath-mould. The Kamtschatka Lily bears yellow jonquil-scented flowers, blooming in July, and, as its name indicates, is an alpine. The Monadelphian Lily, *L. Monadelphum*, so styled from its stamens being united, as in the Linnean class Monadelphia, for one-third of their

length, and Szowitz's Lily, often confounded with the preceding, are similar in constitution. The Isabelle Lily, *L. testaceum*, of a light bright brick-red or buff, of unknown origin, is as easy of cultivation as the common White and Orange Lilies. Thompson's Lily, so named by Dr. Lindley, has lilac flowers half the size of the White Lily, requires light loam, and protection from damps in winter. *L. giganteum*, a noble lily, sends up a flower-stem ten feet high.

The following exquisite species are more or less hardy, as far as present experience goes, in a mixture of leaf-mould and sandy loam: The Japan Lily, *L. Japonicum* (often confounded with the sweet-scented lily, *L. odorum*, also from Japan, a treasury of flowers which has furnished several beautiful species of lily), a superb plant, bears very large solitary and terminal white flowers slightly dashed with purple outside. The Long-flowered Lily, *L. longiflorum*, resembles the former, but is still handsomer. Brown's Lily, much in the same style, and Wallick's Lily, from the north of India. Perhaps the most elegant of all is the Lance-leaved Lily, *L. speciosum*, or *lanceolatum*, of which there are several varieties, which may be classed under the heads of *white* and *red*, or *L. speciosum album* and *L. speciosum rubrum*. Plants of these may be had of respectable seedsmen and florists, such as James Carter & Co., 238, High Holborn, for from two to three shillings each. As yet, they are grown in pots, in peaty soil, and are treated as greenhouse perennials. They well repay any trouble that may be bestowed on them; but plants from China and Japan have often proved more hardy than was expected at their first introduction. It is probable that the scaly bulbs of the whole Lily genus are edible in case of need. In rustic medicine, the pounded bulbs of the White Lily are a favourite cataplasm for burns and scalds.

Narcissus.—Two species have been already noticed under their trivial names of Daffodil and Jonquil. By Narcissuses, in ordinary gardening language, are understood the Polyanth or Many-flowered Narcissus, *N.*

Tazetta, and the many varieties derived from it, as florists' flowers. The rest are looked upon as mere border flowers. *N. concolor*, with white blossoms, runs into numerous varieties, one of the finest of which is known as the Grand Monarque. The poetic Narcissus, *N. poeticus*, with its ring of purple encircling the centre of the flower, is not without a certain elegance. Perhaps the most prepossessing species, on account of its dwarf habit, its less powerful odour, and its graceful mien, is the pretty little Hoop-petticoat Narcissus, *N. bulbocodium*, which though not a rare, is far from being a vulgar flower, as it increases anything but rapidly by offsets. Grown in pots, it well deserves a place in spring in every sunshiny parlour-window. It thrives better in warmer and drier soil than the former species. Some botanists make it a separate species, and call it *Bulbocodium vernum*. Is found wild amongst the hills of Dauphiny and Provence. There is also *B. tigrinum*, a native of Russia.

Polianth narcissuses are annually imported from Holland, with tulips, hyacinths, and other Dutch bulbs. It must be owned that the varieties of narcissus, consisting merely of permutations and combinations of two colours only, yellow and white, in single and double-centred flowers, offer much less diversity than other bulbs of similar rank in the seedsman's catalogue. Still they have their steady admirers, attracted by their graceful habit, the case with which they are forced, and even by their powerful odour, which is sufficiently oppressive to exclude them from the private apartments of many who would otherwise welcome them. For room-decoration, scentless flowers, as the camellia, are the most advisable to employ, as far as sanitary prudence is concerned. The rose, the violet, and mignonnette are harmless; certainly in the moderate quantity in which they commonly enter into dwelling-apartments; others, as the heliotrope and the lily of the valley, often give headache, and even nausea; while many of the liliaceæ, notwithstanding their beauty, notoriously exhale an insupportable efflu-

vium. In the saffron harvest, not only are the women who separate the pistil from the petal of the flowers, obliged to keep up a strong current of air in the room where they are at work, and are often compelled to leave their task and recover themselves in the open air from the stupifying influence of the odour given out, but even the saffron-gatherers in the field (mostly women) are attacked now and then by drowsiness followed by fainting-fits. Double sashes and glass cases, *i.e.* miniature close-shutting greenhouses, afford the best means of gratifying the sense of sight, in the case of strong-scented flowers, without offending the sense of smelling.

Narcissuses may be bloomed, like hyacinths, in glasses; but it is not the object of the present Book to indicate the *worst* mode of growing flowers. In pots they may be treated exactly like hyacinths, with a still more liberal supply of water, and in even lighter compost. It requires one kind of soil (rich and substantial) to bring the bulbs to their full strength, and another (more poor and sandy in its nature) to produce the utmost perfection of bloom. This explains why imported roots flower better than those in ordinary garden borders; demonstrating that even in floriculture, a division of labour has its advantages. To narcissuses, as to other bulbs, the rule may be applied: "Take care of the leaves, and the flowers will take care of themselves." To return again to the instance of saffron: when the flowers are all gathered, and the field is green in winter with the rank long leaves, its proprietor is carefully anxious to fence out hares and rabbits (which are fond of the plant), and to prevent them from feeding on the foliage, which is of no use to its owner, because experience has told him that if *that* is injured, his next year's saffron will be proportionately defective.

Snowdrop—Galanthus nivalis.—Although so common and easily-grown a flower, a garden without snowdrops would be sadly incomplete. There are single and double snowdrops; the former is, to many eyes, the more graceful; it has also the merit of being somewhat earlier and of best deserving its French name, *Perceneige*, or Pierce-

snow. Poets have made it the subject of their rhymes, sometimes with the license allowed to them; as when the Goddess of Spring, in some propitious hour, has changed an icicle into a flower:—

> "Its name and hue the *scentless* plant retains,
> And winter lingers in its icy veins."

But the snowdrop has an agreeable though faint perfume. Snowdrops may remain for years in the ground without being taken up, though it will be better to do so from time to time with border patches, to prevent their growing uncouth and ragged. They thrive well in somewhat moist and shady situations, such as under a clump of oaks on a lawn; *there*, of course, single flowers only are appropriate, double flowers being out of place beyond the limits of the parterre. Single snowdrops are not shy in bearing seed, though they are seldom propagated in that way, except by the hand of nature. Both kinds increase by offsets. Plant in August or September, at the depth of two or three inches.

Snowflake — Leucojum æstivum — Has flowers very similar to the former in general appearance, but are produced, several on one flower-stem, which is taller, and with a greater proportion of foliage. Quite hardy, only requires lifting every three or four years; but besides its more rampant growth, is of much less value than its cousin the Snowdrop, from blooming in summer, when we have so many more attractive candidates for our favour.

Squill—Scilla.—A pretty genus, with what gardeners call very "neat" flowers, whose tint is mostly a pleasing, and in some a brilliant blue. The least prepossessing species, *S. maritima*, the Maritime Squill, makes up for its modest spike of dull-looking flowers by its medicinal virtues. Its large exposed bulbs grow abundantly on the rocks, in many parts of the Mediterranean coast. If cultivated here as a curiosity, it must have the protection of a green-house in winter, and the bulb must be planted not more than one-third or one-fourth of its

depth, in a large pot of light loam. *S. Peruviana*, the Peruvian Squill, is not a native of that country; but was taken to the New World by the Portuguese, and brought back to Europe in the seventeenth century, after becoming naturalized on the coast of Chili and Peru. Bulb large, flowers blue (there is a white variety), best kept in a pot, in light soil, under a cold frame. *S. amœna*, *S. Italica*, and *S. campanulata* all bear flowers of various shades of blue, may be left in the ground several years, and do best in a light, dry, warm soil, with a certain amount of shade. The Two-leaved Squill, *S. bifolia*, the Siberian or early Squill, *S. Sibirica*, or *præcox*, and *S. umbellata*, merit pot-culture, although they are perfectly hardy, that they may take their place amidst forced jonquils or hyacinths. The Siberian Squill, especially, is one of the prettiest emblems of spring which we have, joined to which, its dwarf and graceful stature renders it worthy of all admiration. The Wild Hyacinth of our woods is by most botanists enrolled with Squills, as *S. nutans*, Nodding Squill, though it was formerly classed as *Hyacinthus non scriptus* (also as *Agraphis nutans*), in allusion to a mythological fable which can have no place here; nor can the plant itself claim admission into gardens.

Star of Bethlehem—Ornithogalum.—A genus very closely allied to the former. *O. umbellatum* is one of the commonest. The French call it the Eleven-o'clock Lady, because it opens its cluster of bright white flowers an hour before noon, when the sun shines brightly, shutting them again at three. The corolla only expands under the strong stimulus of light. It is also *supposed* to be one of the plants mentioned in Scripture. *O. pyramidale*, styled by the French the Virgin's Spike, displays its handsome white blossoms at the end of June. *O. fimbriatum*, Fringed Star of Bethlehem, has white flowers striped with green. These are all of easy culture, and, indeed, scarcely deserve any great pains to be taken about them, beyond lifting and separation every second or third year. There are Cape Stars of Bethlehem, which are not safe unless treated as Ixias.

Tiger Flower—Tigridia pavonia,—derives its principal charm from the ephemeral duration of its singularly-shaped and coloured blossoms, which expand and fade within a few hours. It is consequently not well adapted either for bedding or for pots, although each strong bulb will produce several blooms crowning the tuft of bright sword-shaped leaves. It is most effective in patches in a bed or border near the living-room windows, where its gaudy petals will be sure to catch the eye, and where it will escape the inglorious fate of the many flowers that are only born to blush unseen, and waste their brightness on the desert air. Though a native of Mexico, it may be left in the ground all the year round *when and where* a mild winter and a dry soil can be insured. But it is safest taken up in autumn, when the leaves are quite withered. Propagate by seeds and offsets.

Tuberose—Polianthes tuberosa.—An old favourite allowed to grow obsolete, because it gives a little trouble and costs a trifle of expense. It is true, also, that it belongs more to the conservatory than the flower-garden; still, a word or two shall be written to help its restoration to public favour, for it is now so utterly neglected that many useful plain gardeners have never seen such a thing as a tuberose. The bulbs are annually imported from Italy; it is of little use trying to do anything with them here after they have once flowered, unless as a test of horticultural skill. Plant them in large heavy pots in light, rich loam, in March, and plunge them in a hotbed. When the central bud has started a few inches, remove them either to a warm light place in the greenhouse, or to a very sunny frame. In July, such plants as are not retained indoors, may be plunged in their pots, to flower in the open air, either in clumps, or along a border. They form an elegant avenue, alternated with the Pyramidal Campanula. As the flower-stems rise to from four to six feet in height, they must be supported by light straight stakes of equal length; and it is this peculiarity which gives the flower its *architectural* character, and usefulness in decoration. It is

very generally employed on the altars in Italian churches, where the perfume exhaled by its pure white flowers is said to have the same effect as mignonnette-boxes in London; namely, the keeping of evil smells and infections at bay. Double tuberoses will be preferred as handsomer, if not more odoriferous, than single ones. While the flower-stem is rising, the plant is greedy of heat and water; admit air also at every available opportunity.

Tulip.—There are several species of Tulip, all of which produce elegant flowers. The Wild Tulip, *Tulipa sylvestris*, bears bright yellow flowers in April or May. There is a very showy double variety, which, though not esteemed by florists, is very effective as a border flower. *T. suaveolens*, the sweet-scented or Van Thol Tulip, is an extremely pretty dwarf plant, with bright-red petals edged with yellow, flowering in April, and valuable for forcing, in association with other spring bulbs. It may be left all winter in the open ground. Parrot tulips, also early, remarkably showy, and well adapted for pot-culture, are supposed varieties of *T. sylvestris*. The tulip about which the Dutch once went mad, the Florists' Tulip, which still retains its admiring fanciers, is *T. Gesneriana*, or Gesner's Tulip.

On the Florists' Tulip a treatise might be written which should far exceed the entire limits of the present Book. It is a special, and somewhat thorny as well as complicated branch of the grand floricultural tree. Nor are all growers agreed as to classification and management. To convey to the uninitiated some idea of the rules of art, it is worth while transcribing from "Glenny's Properties of Flowers," the twelve points which he has laid down as indispensable for the Tulip:—"1. The cup should form, when quite expanded, from half to a third of a hollow ball. To do this, the petals must be six in number; broad at the ends, smooth at the edges, and the divisions between the petals scarcely to show an indenture. 2. The three inner petals should set close to the three outer ones, and the whole should be broad enough

to allow of the fullest expansion without quartering (as it is called), that is, exhibiting any vacancy between the petals. 3. The petals should be thick, smooth, and stiff, and keep their form well. 4. The ground should be clear and distinct, whether white or yellow. The least stain, even at the lower end of the petal, would render a tulip comparatively valueless. 5. Roses, byblomens, and bizarres, are the three classes into which tulips are now divided. The first have a white ground, and crimson, or pink, or scarlet marks; the second have white grounds, and purple, lilac, or black marks; and the last have yellow grounds, with any coloured marks. 6. Whatever be the disposition of colours or marks upon a tulip, all the six petals should be marked alike, and be therefore perfectly uniform. 7. The feathered flowers should have an even close feathering all round, and whether narrow or wide, light or heavy, should reach far enough round the petals to form, when they are expanded, an unbroken edging all round. 8. If the flower have any marking besides the feathering at the edge, it should be a beam, or bold mark down the centre, but not to reach the bottom, or near the bottom of the cup; the mark or beam must be similar in all the six petals. 9. Flowers not feathered, and with flame only, must have no marks on the edges of the flower. None of the colour must break through to the edge. The colour may be disposed in any form, so that it be perfectly uniform in all the petals, and does not go too near the bottom. 10. The colour, whatever it be, must be dense and decided. Whether it be delicate and light, or bright, or dark, it must be distinct in its outline, and not shaded, or flushed, or broken. 11. The height should be eighteen to thirty-six inches; the former is right for the outside row in a bed, and the latter is right for the highest row. 12. The purity of the white, and the brightness of the yellow, should be permanent, that is to say, should stand until the petals actually fall." Exhibiting gardeners and fanciers will do well to consult the same authority for the "properties" of other Florists' Flowers.

Tulip-beds are made much in the same way, and composed of nearly the same materials, as those for hyacinths. A trench four feet wide, or thereabouts, is dug out; a few inches' depth of shingle is laid at the bottom, to insure drainage, if the subsoil is clayey, and the rest is filled with a compost of fresh loam, leaf-mould, river sand, and the well-rotted dung of *ruminant* animals, when such is to be procured, all thoroughly and previously incorporated together. Much mystery has been made about special and incomparable receipts for the ingredients, and their proportion, in a tulip-bed; but it may be suspected that these important formulæ contain a certain amount of quackery. The soil of a tulip-bed should be renewed every year; it will still serve for the culture of other flowers. The bed should be raised an inch or two above the level of the ground, and slightly raised in the middle. The beginning of October is a good time to plant. Draw parallel lines, with a cord, six inches apart, along the bed, and cross them with lines at right angles, also six inches apart. At the points where these cross, the bulbs can be gently pressed into the soil just deep enough to keep them standing upright. Some amateurs previously arrange the order in which the tulips are to be placed, so that they correspond in the bed either with a numbered plan, or with the compartments in the store-boxes. When the bed is thus covered with bulbs, and it is seen that all is right, lay additional soil over them *with the hands*, till they are covered to the depth of from four to five inches. The earth must be kept up at the edges of the bed either with thick turfs laid edgewise, with the grass outside, or with a border of stone or earthenware. The former, clipped close, makes a pleasing frame to the bed; the latter are less liable to harbour slugs, snails, and worms. It is better thus to heap earth over the bulbs, than to plant them with the trowel or dibble; because the soil, remaining free from all compression, is more readily penetrated by the root-fibres. During frosts and heavy rains, the beds should be covered by canvass or matting sustained by hoops. As the leaves

and flower-buds begin to peep above-ground, this precaution becomes the more necessary, as the future bloom might be seriously injured, or even destroyed, by exposure to an inclement spring. Valuable collections, during their flowering, are mostly sheltered by an awning; afterwards, the sun and air are allowed to exert their full influence. The immature capsules are broken off, to prevent exhaustion of the bulb, unless it be desired to ripen seed. When the leaves are completely withered, the bulbs are carefully taken up: it is dangerous to expose them to burning sunshine. At the same time they must be thoroughly dried, before final storing in some airy place, in their box-compartments, where also they can be safe from mice. Offsets will mostly come away better at a later period.

These offsets eventually become bulbs that produce flowers identical with those of their parent. Tulips raised from seed bloom in their fourth or fifth summer; and if the seed has been well selected, there is a chance of obtaining from out a large number, a few good and novel varieties. Their tints will be at first confused; but in succeeding seasons, they will gradually break, and become clear and distinct. This transitional state of the tulip (during which it is called a "Baguette") lasts from two to fifteen years.

When the capsules of tulips allowed to bear seed begin to open at the top, they are cut off, and kept till September or October. Sow them *on* a bed, or a large earthen pan, of light rich soil, and cover them lightly with leaf-mould half an inch thick. The first year, they will put forth a single leaf. When this is withered, the *surface* of the mould may be renewed. The second summer, they may be taken up, to be replanted *immediately* in tulip compost. The third year they may be treated like offsets. All this while they must be carefully weeded, and protected from the inclemency of the seasons. If a seedling is a year behindhand in showing bloom, it promises all the better for that circumstance. In other cases, a tulip of the highest merit will put forth

a worthless scarcely-recognisable bloom. The most usual causes of this phenomenon are, changes of climate, culture, or, above all, of soil, or even the accident of a cold and wet spring. The next year's bloom will often appear adorned with all its pristine beauty. Meanwhile, if it balks your expectations, do not be discouraged; the fit will pass, and all will be right again.

On cool reflection, and admitting all the floral pretensions of tulips, it must be granted that they have attained a higher rank in the world of flowers than their intrinsic beauty entitles them to claim, especially since the introduction of numerous rivals from foreign lands. The varieties of tulip (the choicest of which do not exceed eight hundred in number) present much less striking distinctions, both in colour and form, than those of many other flowers,—for instance, of the hyacinth and the rose. Certain varieties of florists' tulips are sweetly scented,—a pleasing peculiarity, which deserves a greater measure of favour than has hitherto been accorded to it.

Zephyranthes candida.—A small bulb, producing in October a single flower, whose three interior lobes are pure white, and the three exterior tinged with pink at their tips. In a warm dry soil may remain out of doors all the year round, only requiring to be taken up every third or fourth year. *Z. Atamasco* is still handsomer and equally hardy. *Z. rosea* is best cultivated in a frame, in pots.

TUBEROUS AND RHIZOMATOUS FLOWERS.

A tuber is a solid root, like those of the potato and the dahlia. In some respects it is analogous to a bulb, as having alternate periods of growth and rest, during which latter it will exist independently of the soil, and may be transported to long distances. It also contains the nutriment of the future plant, as well as the germ itself, which, however, is in a much more embryotic state than in bulbs. A perfect bulb contains but a single leading germ; a tuber has mostly several. A tuber is less

symmetrical than a bulb, and, unlike it, may generally be divided into portions during its period of rest, each of which portions will grow and form an independent plant, provided that it contains an eye or germ. In tubers, the eyes are either dispersed irregularly, but tolerably equally, over the whole surface, as in the potato (where they are more crowded near the nose) and the anemone, or clustered near each other, more or less numerously, about the crown or neck of the plant, as in the florists' ranunculus, the dahlia, and the cyclamen.

Rhizoma is the botanical name for the underground stem of many plants, which subterranean stem so far resembles a tuber as it often is a reservoir of the plant's nutriment, to the extent of serving as an article of food for man and beast,—and as it is furnished with dormant eyes, has a tendency to put forth roots, and has a period of rest, during which it is passively subject to the requirements of the human will, according to its greater or less power of endurance and torpidity. The transition from tuberous to rhizomatous, and thence to herbaceous plants is so gradual, that the line of demarcation is not very easy to fix in a work like this; nor indeed is such a classification professed to be adhered to more strictly than will serve for popular convenience. The tuberous and rhizomatous flowers in most general cultivation will now be noticed in alphabetical order. It is hoped that no very severe fault will be found if the next section is made to comprise plants which might have taken their places here, or if some that are found here might with equal propriety have appeared in the following chapter.

Aconite (*Winter*)—*Eranthus* (spring flower) *hyemalis* (wintry).—Linnæus named it *Helleborus hyemalis*. A charming little plant, which has perhaps the greatest right of any to claim the merit of being our very first spring flower. Hence, it is commonly known as "The New Year's Gift," but is less familiar to the inhabitants of towns than to country residents. It thrives best in a somewhat damp and shady situation, and does not like to be disturbed too often; consequently, it does better under

trees and shrubs, or in a neglected corner screened by walls, than in the open parterre. It increases fairly, both by root and seed, remaining dormant about eight months of the year. In removing, take up a *large* patch, to make sure of having a sufficiency of the creeping fleshy root to furnish good eyes. Under pot-culture, it must have large shallow pans; common flowerpots cramp it too much. A mignonnette-box all to itself answers very well. In any case, it must remain where it is during both growth and rest, with a renewal of the surface soil every other year. Like the true hellebores, its bright yellow flowers exhale an odour which many persons find oppressive and disagreeable. For other Aconites, see *Monkshood*.

Anemone, i.e. *Windflower*.—Of the Florists' Anemone, *A. coronaria*, the very numerous varieties may be separated into two classes, the single and the double. The former are multiplied both by seed and by division of the root; the latter by division of the root only. As with hyacinths, double anemones should be grown on different beds from the single ones, since they bloom at a later period; the character of the flowers, moreover, does not harmonize well together. Semi-double flowers, or those with more than the normal number of petals, sometimes called Kilkenny anemones, take rank with single ones; they are also capable of bearing seed. In double anemones, the stamens and pistils, the organs of reproduction, are changed into a thick rosette of small petals. Single anemones are in esteem amongst gardeners, although double roots fetch a higher price. The colours of anemones are red, blue, and white, or very pale straw-colour, and their intermediate shades. The plant is particularly valuable from its flowering late in autumn and throughout mild winters, more or less, to burst into brilliant bloom in early spring.

Anemone roots may always be had of respectable seedsmen. Plant them as soon as possible after they are taken up in summer. But to make a bed of single anemones, the best plan is to sow seed, which many people make a

point of saving only from flowers of the richest blue and red tints. The precaution can do no harm; but it is questionable whether it has any effect if the seed be gathered from off a large bed; for the produce therefrom is completely hybridized by the agency of the wind and of bees. Over-year's seed will succeed very well; still it is better to take that of the current season, sowing as soon as it is ripe, in May or June.

Mark out your bed on a spot of good friable hazel loam, which is in good heart or has been well manured the previous year. Rank fresh manure must be avoided. Break it up well to the depth of two feet at least; thoroughly pulverize the top spit; remove all pebbles and roots of weeds; rake the surface perfectly level. The breadth of the bed should not exceed what is convenient for reaching to the middle for weeding and gathering.

Anemone seed is light and woolly, hanging together in knots like carrot seed. To avoid this inconvenience, mix it up with a considerable proportion of moist sand, rubbing it well between the hands. Sow broadcast as evenly as possible, and not too thick if the seed be new. Cover with a thin stratum of lighter loam and leaf-mould dusted over the bed with a sieve. The seed is somewhat slow to germinate, and weeds will make their appearance first. These must be drawn out, as soon as they are big enough to be laid hold of by the finger and thumb. Very gentle waterings must be given, if the drought is severe and the sun scorching. As the little green twin-cotyledons of the anemones show themselves, the same attention to weeding and watering must be repeated, to be continued during the summer. In October, a few flowers will appear; next spring, there will be a respectable show; and the following season, the bed will be bright with divers colours. The best flowers are not the first to come into bloom. From every fresh-sown bed, one or more double roots may be expected; but these will often not manifest their presence till the second or the third year after sowing. Fresh seed is more likely to produce double and richly-tinted flowers than old seed; because

the embryos from which *they* are produced, are of comparatively feebler vitality. In a lot of old seed, the germs of the finest flowers are mostly dead; those which do come up being only the robuster and coarser individuals.

It is better not to disturb an anemone-bed too often. At the end of four or five years, when the roots have become crowded and the soil requires a partial renewal, they may be taken up *as soon* as the foliage is *quite* withered, to be replanted in a fresh spot as early as convenient. Anemone roots are dormant for a much shorter period than most other tubers; consequently, no time must be lost. A fortnight's, or even a week's delay, especially in the time of taking up, may seriously impair the next season's bloom. At the time of lifting the roots, remove an inch or so of the surface soil, give the bed a not too rough raking, and throw over it a coating of fresh well-pulverized loam, equal to that abstracted. If the weather be dry, water with *very* diluted liquid manure; wait for a few weeks patiently, and you will find your old anemone-bed covered with plants springing from the fragments of tubers left in the ground, which will bloom vigorously in due season. In short, you will have two beds for one. Double anemones require the same soil and treatment. Do not wait till September or October, but plant your roots *as soon as you can get your collection together.* Remember, anemones do not like to remain long above-ground. It is not usual to name the choice varieties that are raised, either of single or double anemones. In fact, they would make a list long enough to reach from London to York, extensible, at the florist's will, to John o'Groat's house and the Orkney Isles.

The Japan Anemone, *A. Japonica*, is an elegant and useful acquisition recently introduced from Japan. It is perfectly hardy, thrives in any good light soil that is not too dry, producing an abundance of its pinky-purple flowers throughout the autumn. It rarely ripens seed, but may be readily propagated by division of the root, a very small portion of which will grow. Its

most effective in large patches or small beds. The Elegant Anemone, *A. elegans*, also from Japan, is more robust than the preceding, and hardy. The Apennine (with blue flowers), the Narcissus-flowered (white and yellow), and the Wood (white) Anemones, *A. Apennina*, *narcissiflora*, and *nemoralis*, are pleasing ornaments to the shrubbery and pleasure-ground. *A. pulsatilla*, violet-blue, flowering in May in dry flinty ground, deserves both mention and cultivation.

Arum.—The Snake-root, *A. dracunculus*, or Dragon Arum, is often found in old flower-gardens, and deserves a place in modern ones. Its handsome speckled stem, like a serpent's skin, bears, when in vigour, a remarkable, large, dark-purple flower, which however is unsuited for admission into the interior of the mansion on account of its powerful carrion-like smell. Still, the Snake-root in bloom is an object not to be passed without notice. Any deep rather moist garden soil suits it, but it must not be disturbed for division of the root or transplantation. After those operations, it refuses to flower for a year or two, till it has recovered its strength. The old herbalists attribute wonderful virtues to the Grande Serpentaire, or Serpentine, as they call it. *A. crinitum*, or *muscivorum*, the Hairy or Fly-catching Arum, a native of Corsica, produces in spring a central spadix surrounded by a spathe, which is blotched with green outside, and inside is lined with violet silky fibres inclining downwards, and in which are caught and held fast the flies attracted by the cadaverous odour exhaled by this extraordinary inflorescence. It rarely flowers in a pot, and requires protection during winter in the open ground. The White-flowered Arum, *Calla*, or *Richardia Æthiopica*, makes an elegant decoration to the edge of a pond; but it must be treated as a pot-plant during winter. Is easily propagated by division of the root, and requires to stand in a pan always half-filled with water, except during frost.

Christmas Rose—Black Hellebore, Herbe de Christ of old French writers, *Helleborus niger*—produces its

handsome white blossoms tinged with pink from December to February, according to the weather. As the flowers, when put forth, are apt to be damaged by sleet and rain, they well deserve the occasional shelter of a hand-light, or even a slanting piece of plank. The foot of an east wall is a good situation, to avoid the drenching south-west storms that pelt from time to time in mild winters. Soil, a light fresh loam. Propagate by root-division, not too frequently. Seeds, sown as soon as ripe, will produce slight varieties, more or less tinged with pink, which will blossom in their third year.

Cyclamen.—A charming genus of humble, pretty, sweet-scented spring flowers, whose ugly French and English names, Pain de Pourceau and Sowbread, ought to have been replaced by some more pleasing appellation, even though the tubers may be rooted up by swine in the woods of Italy and Switzerland. Although the European species, *Cyclamen Europæum, Coum, repandum,* and *hederæfolium,* may and will pass the winter in a dry open border, with some slight protection of litter or matting overhead, they are safest in pots in a cold frame. The broad-leaved Cyclamen, *C. macrophyllum,* a native of Algeria, unlike the others, flowers in the autumn. The most elegant of all, the Persian Cyclamen, *C. Persicum,* must be grown in a pot, with the tuber partially above-ground, in which, if large enough, it may remain for several years, with an occasional renewal of the upper portion of the soil. Old tubers will thus produce large tufts of numerous pink or purple and white flowers, so graceful in their shape that Hogarth selected them as one of his illustrations of "The Line of Beauty." All the Cyclamens are propagated from seeds, which must be sown immediately they are ripe, in shallow pans of light rich earth, and be grown under frames with plenty of air and little heat the first few years. The tubers, after flowering and maturing their leaves, must be kept in a dry and airy place during their period of annual rest, *i. e.* from July to December.

Dahlia—Dahlia variabilis—a floral upstart, the whole course of whose rise to fame and fortune is within the memory of many persons now living. The original single-flowered plant, from Mexico, first claimed the attention of horticulturists as an edible root, whose repulsive, nauseous, peppery taste inspires equal disgust to man and beast. Then, single dahlias were thought fine things, and various gay colours were obtained from seedlings. Then came the phenomena of double dahlias, which were taken into favour by enterprising florists, and improved, and improved, till they became what we see them now. The dahlia is essentially a *made* flower; its cultivators proposed to themselves a certain model, as to form and furnishing of petals, which they determined to perfect; and by skill in hybridizing, by outlay in sowing enormous numbers of seeds, and, above all, by patient perseverance, they *have* perfected it. One great point, however, they have not attained,—the production either of a blue, or of an agreeably-scented flower. No attempt will here be made to name any of the choice varieties of Dahlia which, at the moment of this present writing, may chance to be the favourites of the day. The existence of this little Book may be more durable than most of theirs; and it would be of little service to print a list that would soon become obsolete by the intrusion of fresh candidates for the public applause. Inquiring readers had best consult the current numbers of the *Gardener's Chronicle*, in whose advertisements and answers to Correspondents they will be sure to find all they are in search of. Perhaps, though not probably, a blue perfumed Dahlia will start from the earth; in which case, those which now figure in the parterre will have to hide their diminished heads, for a time at least. Many old esteemed varieties have completely disappeared; while the mercantile horticulturists, both of Great Britain and the Continent, annually inundate the market with a copious flood of novelties, many of which are inferior to their predecessors. The wisest course for the inexperienced amateur is to leave the

selection of his Dahlias to the respectable nurseryman of whom he orders them.

The Dahlia thrives best in a good rich hazel loam. Both the leaves, stem, and roots are killed by frost; the latter, consequently, must be kept in a place of safety during winter. The stem is fragile, and apt to be blown down or snapped short by high winds; it is therefore best supported by a stake inserted into the ground at the time of planting the root or cutting. The young shoots, in their early growth, are apt to be eaten off by slugs and snails, which must be driven off or destroyed by circles of lime and ashes, or by waterings with lime-water. The blossoms are apt to be bitten and spoiled by hungry earwigs, to obviate whose onslaughts traps of hollow bean-stalks, to be inspected once or twice a day, are hung at enticing intervals amidst the foliage; or circular earthen pans, to be filled with water, are placed at the foot of each plant in the early stage of its growth, so as to keep the enemy at bay by a miniature kind of encircling ditch. Choice blooms for exhibition are shaded and protected in various ways.

New varieties of Dahlias are obtained from seed; the varieties themselves are propagated—first, by division of the tuber at the crown, in which case it must be seen that each portion is furnished with an eye; and, secondly, by cuttings, which will strike root, and form tubers of their own by the end of summer. If a Dahlia tuber be planted entire in spring, it will mostly send up several stems. It is usual to leave only one of these, as producing a handsomer and more symmetrical plant.

In forming a collection of Dahlias, the general mode is to order the number required of a nurseryman, in good time during the winter, if the newest new novelties are a matter of importance. They will arrive some time in spring, in the shape of rooted cuttings two or three inches high, in small pots, and must be kept in a greenhouse or in a frame, till the end of May, or such time as all danger of frost is over in that locality. They may then be planted out in rows, beds, quincunxes, or

avenues, taking care to plant them at the distance demanded by their lofty stature and vigorous growth. The further cares are—watering; protection from vermin; tying the stem, as it rises, to the supporting stake; and the cutting out of unnecessary and irregular shoots.

In the climate of England, Dahlias are unable to complete the entire circle of their vegetation. In October they are in full force, and the slightest frost destroys them then. In order to prolong the duration of their blooming, they are sometimes planted in large pots, which are plunged in the border during summer, but are lifted and removed to a greenhouse or conservatory as autumn advances. The forward buds are thus enabled to expand in safety. But plants so treated display only a short-lived beauty; to flower well, Dahlias must have the open air. The tubers ought to be left in the ground some time after the autumnal frosts have destroyed the foliage; they still find nourishment there, complete their ripening, and are consequently less difficult to keep. About the middle of November is the usual time for taking them up, an operation which ought to be carefully performed, avoiding wounding the roots, and choosing if possible a bright calm day. They may be left a few hours to dry in the open air, to be thence removed to any place secure from frost, where neither the excess of dryness or moisture is to be feared. They will pass the winter exceedingly well, covered with sand on the floor of a dry and wholesome cellar.

At the end of March, as the time for planting out approaches, remove the tubers from their winter quarters into a hothouse, or lay them side by side, close to each other, on a gentle hotbed under a frame. Those whose crown is still surviving, will soon begin to vegetate; the rest may be thrown away as worthless. Some persons plant the tubers entire; but the practice is bad. On the contrary, they should be divided as much as possible, bearing in mind the indispensable precaution to leave at least one starting eye on every portion. If the season is so far advanced that all fear of frost is over,

they may be planted out at once in their permanent sites; if not, in pots filled with good mould, which must be kept on a hotbed under glass, admitting plenty of air, till the first week in June. The first blooms are mostly imperfect; and Dahlias are scarcely in their full beauty till the great heats and droughts of summer are over; that is, at the end of August and in September. It is as well to cut off all imperfect and faded blooms, that the sap may be directed to the buds that are successively coming forward. There is no need, here, to do more than allude to the grafting of choice Dahlia-shoots on the tubers of inferior varieties.

The Dahlia derives its principal value from its filling the void left by the disappearance of summer flowers, as well as from displaying its finest blooms at the season when our aristocracy return from town to their country seats. It is a gaudy, flaunting, showy plant, which has the great merit of usefulness in its way; but it is far from possessing all that can be wished for in a flower, and no doubt many of its early worshippers will now confess that they prostrated themselves too blindly before their idol. But every one has, and ought to have, his taste. We have no right to blame, though we may not sympathize with, the amateur who prefers a Dahlia to a Rose.

A smaller species, *D. cosmæflora*, which has not yet started off into varieties, is of dwarfer habit, and produces flowers with a purple disk and lilac rays.

Hemerocallis flava.—Day Lily; a plant with yellow or tawny flowers, which was not mentioned at the same time with the other Lilies, simply because its root is not bulbous. It is a coarse plant, quite hardy, fitter for the shrubbery than the choice parterre, producing a tuft of long narrow leaves, and easily propagated by root-division. This Day Lily produces a fair succession of ephemeral flowers. Other Day Lilies have been made into a separate genus, *Funkia*, more remarkable perhaps for their leaves than their flowers. *F. subcordata* has heart-shape leaves, of a bright green, with longitudinal folds or plaits,

and bears, towards the end of summer, a spike of white sweet-scented flowers. *F. Cærulea*, has smaller, somewhat earlier, violet-blue flowers, and oval heart-shaped leaves, of a darker green, and with more strongly-marked longitudinal veins. Both species like a warm dry soil, and flower well in pots on a sunny shelf of the greenhouse, though they will live out in the open ground. They are made for a longer summer than our own.

Iris.—Several of the tuberous-rooted Irises are decided and deserving favourites. The most striking is the Chalcedonian Iris, *I. Susiana*, or Widow Iris, whose large flowers are marbled or veined with a dull greyish purple-brown, which suggests the idea of the hues of mourning. Must have a warm, dry, deep soil, and does not like disturbance. Will be sure to rot off with too much moisture. The most common Iris is the German, *I. Germanica*, useful for its hardihood and thrift in confined situations; will grow even on roofs or the tops of walls. Its blue flowers appear in May and June. There are paler and also white varieties. The Grassy Iris, *I. graminea*, the Silky Iris, *I. setosa*, and the Siberian Iris, *I. Sibirica*, do well in ordinary garden-ground. The Dwarf Iris, *I. pumila*, makes a neat edging of short stiff leaves, above which numerous blue flowers appear in spring. There are white, purple, and russet-tinted varieties. The kind with yellow flowers veined with brown, *I. lutescens*, is a little taller, and flowers sometimes from the month of October. The Hungarian Iris, *I. Hungarica*, is also used for edging. It is also a little taller than the preceding, and displays its numerous violet-blue flowers a little later. More than fifty species of Iris are known to botanists.

Ladies' Slipper—Cypripedium.—An elegant genus, whose species are natives of the mountains of Europe, India, and North America. Their culture is difficult, and their propagation still more so. They must be treated like the terrestrial Orchidaceæ, *i. e.* like those members of that large family which have their roots in the ground instead of hanging to the branches of trees.

(See *Orchis.*) This peculiar branch of floriculture is mostly pursued by persons who make it their especial study, and whose practical experience is aided by treatises, monographs, &c. *C. calceolus*, from the Alps; *C. guttatum*, from the cold regions of Canada, and also from the forests of Siberia; *C. pubescens*, from Carolina; *C. spectabile*, also from North America, may be grown in heath-mould, in the open ground, in a shady yet airy situation. In winter they must have protection analogous to that afforded by a thick covering of snow. The great beauty and singularity of the blossoms of the Cypripediums render them well worth the attention of those who are not deterred by ordinary difficulties, and who will take the trouble to carry out the Theory of Horticulture to its practical and effective results. The plants on sale are mostly imported, and therefore fetch good prices in the horticultural market. L. Van Houtte, of Ghent, Belgium, advertises the very scarce and hardy *C. macranthum*, at two guineas each.

Marvel of Peru—Mirabilis Jalapa—Belle de Nuit, or Beauty of the Night, of the French.—This striking plant requires a somewhat warmer and drier climate than our own, and therefore does best in our hottest summers. It then forms a bushy plant from two to three feet high, covered with red, yellow, white, striped, or mottled flowers, which open when the heat of the day is over, and are succeeded by fresh blossoms the following day. The Night-scented, or Long-flowered Marvel of Peru, *M. longiflora*, differs from the above, in having a more diffuse and brittle habit of growth, with heart-shaped viscous leaves. The flowers, whose tube is from four to five and a half inches long, are of a dull white, and emit, after sunset, a powerful odour, which resembles a combination of orange-flowers and heliotrope. The varieties of the first species, though differing in colour, are similar in their growth and foliage; and therefore should be grown in beds or clumps by themselves alone, without being mixed up with the second species, which may be planted singly, in rows, or in small groups of three or

four plants. Of the latter, there is a variety with the blossoms tinged with dull violet. Marvels of Peru are mostly treated as tender annuals, sown under a frame on a hotbed in spring, and planted out at the beginning of June in a well-sheltered border, where they can bask in the reflected heat from a wall, and luxuriate in light rich sound loam. But they really are perennials, forming tubers, which may be taken up and kept like those of Dahlias, to be replanted the following summer. For those fond of powerful perfumes indoors, the Night-scented Marvel, grown in a pot, and brought forward by bottom heat, would make an agreeable variety to the ordinary list of odoriferous flowers.

Monkshood—Aconitum.—A genus whose expulsion is strongly recommended from all gardens, especially where there are children and careless servants. The beauty of the flowers does not rise above mediocrity, and is very far from compensating for the danger of poison to be apprehended. The yellow-flowered Monkshood is called *A. lycoctonum*, and Tue-Loup, which both mean Kill-Wolf. The common blue species, *A. napellus*, or Wolfs-bane, has not only poisoned pigs that have swallowed fragments of the plant while amusing themselves with the garden rubbish that has been thrown down to them, but families have been poisoned by eating the scraped root, by mistake, for horse-radish. A French lady stepped into her garden, to listen for the church-bell to ring for mass. Like the ploughman who whistled o'er the lea for want of thought, a wandering mood of mind caused her to pluck and nibble a bit of the nearest plant, whether flower or leaf she could not afterwards remember. At mass, she was taken seriously ill; and, after a horrible afternoon and night, got well in the morning. But she no longer permits Chapeau de Prêtre, or Monkshood, to form one of her list of border-flowers. Authentic cases might be multiplied. Therefore, the directions here given for the treatment of the Aconites, whether blue or yellow, native or foreign, are to stub them up and burn them to ashes.

Orchis.—Many beautiful and curious species of Orchis, and the closely related genus *Ophrys*, are native plants, though now rare. The Bee Ophrys (formerly Orchis), the Spider Ophrys, and the Fly Ophrys, whose flowers resemble those respective insects, were found on the skirts of our woods and pastures. *Orchis pyramidalis* and *fusca*, are attractive objects in their native forests; but the species are very numerous. To cultivate them, take them up when in flower, with a large ball of earth surrounding the roots, and plant them in exactly the same soil, aspect, and conditions as they enjoyed when wild, whether in wet peat-mould, or in dry chalky loam. These conditions are not always easy to combine. Many species require shade and air at the same time; others are only at home in a marsh or a bog. They *may* be grown in pots, but —— The tuberous root of most terrestrial orchidaceæ consists of two lobes, one of which shrivels every year, a new one being formed at the side of the other lobe. Thus the plant travels slowly, but surely, and is therefore not at its ease in a hyacinth-pot, as far as shifting its ground is concerned. The less fastidious species will do tolerably well in a border of heath-mould at the foot of a north-east wall, where they are best left to themselves year after year. Not easy to propagate; but the seeds may be sown as soon as ripe.

Oxalis—Wood Sorrel.—An extensive genus, whose type is that pretty little native of our woods, the *Oxalis acetosella*, whose sour juices furnish a considerable quantity of oxalic acid, to which in fact it gives the name. This same acid is the basis of a salt that is much employed in the arts and in domestic economy; namely, oxalate of potash, or Salts of Sorrel. Certain species have been highly vaunted for the amount of nutriment stored in their tubers; for which see "The Kitchen Garden." The leaves of the Oxalises are ordinarily composed of three leaflets, which are sensitive to light and moisture, like those of the Trefoils. The flowers are always neat and often brightly coloured, but unfortunately the most beautiful must be treated as greenhouse plants, in pots, in

light sandy soil. They comprise tints of pink, red, purple, white, and of brilliant canary-yellow, but have need of bright sunshine to open well. The handsomest species cultivated, *O. speciosa*, from the Cape, has large reddish-purple flowers with a yellow tube, and is tender. *O. violacea*, Violet Oxalis, from North America, stands our winters outdoors. *O. cernua*, or *caprina*, from the Cape, has bright yellow flowers, sometimes double, and is safest in pots. *O. rosea*, Pink Oxalis, a South American annual, is a charming little plant, which on light soils, with sparing waterings, makes an edging that remains a long while in flower. *O. Deppei* may be also employed as a pleasing edging in kitchen-gardens. *O. floribunda* deserves notice.

Pea (*Everlasting*).—The genus *Lathyrus* comprises several very ornamental and favourite species, some of which are perennials with hardy rhizomatous and even tuberous roots, whilst others are elegant annuals. Of the former, *L. tuberosus*, Gland de Terre, or Earth-Acorn, with bright pink flowers, which appear in June and July, in bunches of five or six, was anciently cultivated as an esculent plant, and will grow in any garden soil, from seeds, or tubers planted in autumn. *L. grandiflorus*, the Large-flowered Everlasting Pea, with handsome rosy flowers shaded from dark to light, may be multiplied by seeds *when* such are produced, or cuttings of the root; likes a sunny aspect, and a slight mulching with manure in winter. The least-known species, which deserves to be more extensively cultivated, is *L. Magellanicus*, Lord Anson's Pea, whose elegant foliage and bright blue flowers adapt it for covering a trellis on a wall. Propagate by root-division, and mulch or cover with litter in winter. *The* Everlasting Pea, which is to be found in almost every old-established garden, is *L. latifolius*, with pink flowers (of a rather dull hue, however), which have the merit of making their appearance every summer with admirable punctuality, and without exacting more than the most ordinary care on the part of the gardener. There is a white variety less widely diffused, but of

equally easy culture, which bears bunches of blossoms of remarkable purity. These two varieties combined are useful to supply the living drapery of leaves and flowers, required to clothe the columns of a verandah, the interstices of a trellis, or the walls of an arbour. Under favourable conditions, they will run up to six or eight feet. Propagate by root-division. As a general rule, the Everlasting Peas are shy bearers of seed, and like a deep, well-drained hazel loam.

Of the annual species, the common Sweet Pea, *L. odoratus*, in its varieties of pink, white, and purplish blue, is everywhere petted, both as a border plant and a pot-flower. The seed, which is abundantly produced, has only to be sown in small patches on their site, and the plants sticked when two or three inches high. To have an earlier display, Sweet Peas started in pots, in a frame, or in the parlour-window, may be turned out in May with their balls of earth entire. There are besides, the Tangier Pea, *L. Tingitanus*, with large, dark, purplish-red flowers; and the Abyssinian Pea, *L. Abyssinicus*, with angular and trailing stems, narrow leaves, and bright azure-blue flowers. These need only to be sown in the open ground in February or March.

Pæony.—The genus *Pæonia* is made up of two very distinct divisions; namely, the herbaceous species, which die down to the root every autumn, natives of Great Britain, and of the European and Asiatic continents; and the Moutan, or Tree Pæonies, *P. Moutan* and its varieties, natives of China and Japan, whence they were brought some sixty years back, where they are highly esteemed as ornamental plants, attaining the height of ten or eleven feet, with a shrubby stem. The herbaceous kinds are all quite hardy, suitable for borders or bedding in masses, producing single, semi-double, and double flowers, in shades passing from pure white, through pink, and bright red, to deep crimson. Although the single flowers are more fleeting than the double, as well as less magnificent, a few single-flowered plants should be retained in the garden, not only for the cheerful character

of their blooms, but for their singular seed-vessels, which open and display the scarlet seeds within, and afford a vivid addition to the winter bouquet. All the herbaceous Pæonies delight in a deep, sound, alluvial loam, and thrive even under the shade of trees, by which the duration of their bloom is prolonged.

The tree Pæonies like the same soil, with an admixture of heath-mould or silver-sand; nor are they nice as to aspect and exposure. The great difficulty in flowering them well, is that they shoot their leaves and flower-buds so early, that they are in great danger of being cut off by spring frosts, except in the most favoured situations. Various modes of protection in the open garden have been devised; such as temporary coverings of canvass or oil-paper, and moveable screens of boards, to be left on or taken off, according to weather. Others grow them in large pots or boxes, retaining them in the greenhouse till the bloom is over. In this case, the soil must be renewed every second or third year. The different species of Pæony hybridize together, and many beautiful varieties have resulted from the circumstance. The herbaceous kinds are readily propagated by root-division; the tree Pæonies are more difficult, but still may be multiplied by slips of the root, by cuttings detached at their insertion on the stem, by layers half cut through behind each bud, by grafting on the tubers of the common herbaceous Pæony, *P. officinalis*, or better on the common Chinese tree Pæony, *P. Sinensis*, as this latter does not throw up suckers. The plants, once established, may be left pretty nearly to themselves, and will require no pruning. The nurseryman's list of varieties of Pæony, new and old, is too long to be quoted here. Remarkable species are, the slender-leaved Pæony, *P. tenuifolia*, from Siberia, of which a double variety, obtained in Russia, has been propagated in Holland. The foliage is light and graceful; the flowers very double, perfectly regular, and of the most brilliant crimson. The rose-scented Pæony, *P. fragrans*, from China, has very double pinkey-purple flowers, with a decided rose-like perfume,

and does well in heath-mould in the open air with the protection of a covering of litter in winter.

Ranunculus.—The florists' Ranunculus is the *R. Asiaticus;* but the genus is large, and several of the species, in their double varieties, are cultivated as border flowers. *R. Ficaria,* Double Pilewort, with gold-lacquered flowers, is the earliest and the most dwarf. The tubers may be divided every season. *R. aconitifolius,* Aconite-leaved Crowfoot, produces abundance of double white flowers; the Double Buttercup, or Meadow Crowfoot, *R. acris,* is equally useful in filling up vacancies. *R. gramineus,* Grass-leaved Ranunculus, which also produces double blossoms, is mainly remarkable for its foliage differing from the usual type of the genus. *R. repens,* Creeping Crowfoot, has likewise double yellow flowers. The Turban Ranunculuses are of more robust stature than the above, with larger, semi-double, more globular flowers, varying in shades of white, orange, and yellow. All these are hardy, of easy culture and propagation in soil like that of loamy pasture-land.

The florists' Ranunculus has for many years past been carefully cultivated by the same class of amateurs as tulip-fanciers and auricula-growers. The roots, which are something like miniature dahlia-roots, consist of a bundle of small, fleshy, spindle-shaped bodies, called claws, which are united at the crown of the plant, whence sprout one or more eyes. The Ranunculus requires a light yet substantial loam, free from pebbles, and previously enriched by the complete incorporation of leaf-mould and the materials of a spent hotbed. The proportions of these will vary according to the heaviness or sandy nature of the original soil. All scalding droughts, as well as superfluous moisture, must be guarded against. As to the time of planting, there are two opinions; some put the roots into the ground at the end of October, and this is best *if* the ensuing winter proves favourable. Others defer it till January or February, when they hope that the severest inclemency of the season has passed away. The safety insured by the latter plan is purchased

at a slight sacrifice of the fineness of the bloom. Very small tubers, like those of the Ranunculus, are apt to be weakened by remaining too long above ground. At whatever time, when the bed is prepared and levelled, make along it parallel trenches six inches apart, and from two and a half to three inches deep. It is better to deposit the roots in these, than to drop them into holes made with a dibble. The plants may be six inches apart every way, and can therefore thus be easily arranged in quincunx order. Too wide a bed is inconvenient. In the trenches, at the spot where each plant is to stand, drop a good pinch of river sand, as much as you can take up lightly with the thumb and three fingers. On this sand plant each root, one by one, taking care that the claws are downwards, and the crown of eyes uppermost. Cover in the earth carefully, so that the crown is not more than two inches, nor less than an inch and a half, below the surface. Now comes the critical period of their existence. The claws swell, by imbibing moisture from the earth, and if frost reaches them then, they are apt to perish. The danger is less when vegetation has once commenced, as the superfluous fluid is thus carried off. Covering with hoops, or canvass awning, or a thick bed of straw, or carpeting with mats, must be resorted to when such a casualty threatens to occur. Early in spring, when the leaves begin to peep above-ground so as to render the ranks of plants visible, the surface of the soil between each rank should be compressed with the hand quite close to the plants, on a fine dry day, when the earth is not muddy nor sticky. Protection from March and April frosts, weeding of course, watering (not too hastily nor abundantly) in the droughts of May, and shading when the sun begins to scorch, are the subsequent attentions requisite. Very choice collections of Ranunculuses are mostly complimented with the honour of an awning during their period of bloom. By the beginning of July, the foliage will be all withered, and the roots had better be taken up immediately, lest a summer shower should saturate them with moisture, rendering their

preservation more difficult. Lay them in an airy shady shed, and clean and separate the offsets at once. The finest of these will bloom well, and may be planted together with the full-grown tubers. The lesser offsets had better spend a season in a preparatory bed, to gain their adult strength. The roots may be kept in airy bags, or boxes, till the return of the planting season. The vitality of Ranunculus roots is tenacious; they have been kept out of the ground two, three, and even more years, without perishing. It is needless to observe that such accidents should be avoided, unless purposely tried for the sake of experiment. Offsets are the usual means of multiplication; the tuber also may be divided, when it has more than one eye; but it is a nice operation, with so small a root. Varieties may be infinitely multiplied from seed; for it is asserted that the seed of the ranunculus in no instance ever produces two flowers alike, or the same as those of the parent plant. Semi-double flowers will give seed; of course the handsomest will be selected. When the stems are ripe, they are cut, and hung up in paper bags for a fortnight or a month, to dry. Some sow immediately; but new seed does not rise so well as that a year old. In the open ground, spring is the time for sowing; but in boxes, or under frames, many prefer the end of summer. Sow on light, rich, well-sifted soil, and cover with another very slight coating of earth gently dusted from the sieve. Some lay a stratum of moss over all, till the seeds begin to germinate. Light waterings, moderate exposure to sunshine and air, weedings, and protection from insect vermin, will follow. The seeds are from thirty to fifty days in coming up, according to the temperature. First year's seedlings may be taken up and replanted in fresh soil. They will show bloom from their second to their third year.

Gardeners have taken advantage of the tenacity of life in Ranunculus roots, to obtain blooms from them nearly all the year round. In the open ground, they may be planted every month, from the middle of September to August inclusively. In September and October, they

may be planted in pots, to be brought forward in hot-beds under glass. For a bloom in September or October, plant about the middle of July. For a bloom throughout the season, commence in February, and plant every fortnight or three weeks. In September, plant in a frame, and you will have a bloom about January or February. But it must be confessed, that the Ranunculus loses, by forcing, much of its strength of stem and brilliancy of colour; and there is a time for all things,—even for Ranunculuses to keep out of sight. We do not want every day to behold the very same flower, any more than we desire every day to partake of the very same dish.

Tropæolum.—See "The Kitchen-Garden," art. *Nasturtium*, p. 130. The difficulty of getting *T. tuberosum* to flower, is merely that our summers are not long enough. In November, it will often show abundant bloom; but it must develop its quantum of leaves before it begins to form flower-buds. The best remedy is to bring it forward in a greenhouse in a pot, and afterwards plunge that pot where the plant is to stand. It is an exceedingly useful and pretty climber, as is also the *T. canariensis* or *aduncum*, the Canary-bird flower, which does not form a tuberous root, but must be treated like the common garden Nasturtiums, *i. e.*, as half-hardy annuals. Another exceedingly graceful tuberous species is *T. tricolorum*, the tricoloured (black, red, and yellow) Tropæolum, from Valparaiso, which is almost always in flower. Its very slender trailing stems must be supported on a frame-work of wire, which may be modelled as vases, parasols, columns, peacocks' tails, &c., and which will be completely clothed by the lively foliage and flowers of the plant. The tuber, unfortunately, is not hardy, and the species is mainly adapted for in-door culture. Paxton advises that the root should not be buried, but only placed on the surface of the soil, so that its fibrous roots may penetrate it. The tuber, thus established, will grow in a truly astonishing manner; and although the plants may not luxuriate the first season, they will after-

wards become extremely vigorous. The same high authority recommends using double pots for these plants, and filling up the interstices with river-sand, which should always be kept moist. Perhaps *T. tuberosum* might be made to flower earlier, if its tuber were laid *on* the ground, instead of being buried in it. Certainly, the new tubers which it forms are always at or near the surface. There are two blue-flowered species of Tropæolum; Wagner's Tropæolum, *T. Wagnerianum*, from Venezuela, with fibrous roots, triangular hastate leaves, and fringed-edged petals; and *T. cæruleum*, with tuberous roots. The latter may be multiplied by grafting on the tubers of more common species,—a delicate operation. The latter are not common, and can hardly be regarded as out-door plants, as far as present experience has ascertained. The introduction of these, and innumerable other varieties, is due to the Messrs. Veitch, of Exeter, to whom, and to their collectors, the Messrs. Lobb, European horticulturists are immensely indebted. To those gentlemen recourse may be had for specimens and accurate details respecting these and similar floral novelties. One more remarkable species is *T. speciosum*, from the island of Chiloe, which has large flowers of a bright vermilion, shaded with yellow. All the Tropæolums are climbing plants, whose habit is to hang in festoons from whatever points of support they can attach themselves to, and decorate with their garlands of hundreds and sometimes thousands of flowers.

HERBACEOUS FLOWERS.

Plants are called Herbaceous when, although their existence may endure for a term of years, the stems which support their leaves and flowers, instead of mounting permanently like those of shrubs and trees, die down to the root, or to the tuft of leaves which crowns the root, every winter, to send up fresh stems (if they are not stemless, as is the case with many herbaceous plants) the following spring. They are thus clearly distinguished

from annuals and biennials, which, after making their flower-stem and ripening their seed, whether in the first or second summer after having been sown, themselves perish utterly. For gardening purposes, exotic plants which in their own country would form permanent stems, whether as standards or climbers, but which are killed by our winters down to their root, although *that* may survive either by its own vigour or by the gardener's protective aid,—such plants may be practically regarded as herbaceous here. There are even true shrubs, as certain species of rose, which manifest an affinity to herbaceous plants, by annually shooting young stems from the original stool, which flower vigorously, while the older stems languish and die. It will be seen, therefore, that the list of "Herbaceous Flowers" admits of considerable latitude in its formation. It comprises very many exceedingly useful as well as beautiful ornaments of the parterre and pleasure-ground. The genera and species composing it are very numerous, and the following incomplete notice must necessarily be of the utmost brevity.

Alstrœmeria.—A South American genus, fitter for the greenhouse than the garden. *A. psittacinus*, the most robust. *A. versicolor* resists our winters with a covering over the roots; has produced numerous varieties. Try also *A. pulchella*, *A. aurea*, and *A. peregrina* in the open ground. Propagate by seeds, which will mostly flower the second year; more readily by division of the root, carefully, for it is very brittle. Avoid excess of watering.

American Cowslip—Dodecatheon Meadia—i. e., Dr. Mead's plant of the Twelve Divinities. Linnæus has been sneered at for giving such a name, for no better apparent reason than that this exceedingly pretty plant generally bears a bouquet of *twelve* rosy-lilac flowers at the top of its flower-stem. But the great naturalist was more learned than many of his critics. The Dodecatheon, amongst the ancient Greeks, was a medicinal herb, in great repute as an antidote, on which specific

virtues were believed to have been conferred by each of the twelve heathen gods and goddesses,—Jupiter, Juno, Apollo, Mars, Venus, Ceres, Neptune, Mercury, Vulcan, Minerva, Diana, and Vesta. What the plant was exactly, we know not; but Linnæus paid a graceful compliment to the greatest physician of his age, by coupling his name with a classical herb of medicinal power, while he avoided the anachronism of applying, to an American plant, a name used in Greece before America was discovered, by styling it *Mead's* Dodecatheon. Hardy, and yet not easy to keep. Grow it in a mixture of one-third light loam, two-thirds heath-mould, in a half-shady spot. Never let it be dry, and never wet; in either case, you are apt to lose it. "Another reason of its being lost," as shrewdly remarked by Mrs. Loudon, "is, that as the stem and leaves die away in winter, the root is often dug up and thrown away as dead by jobbing gardeners, who are unacquainted with the plants of the garden they are working in. To prevent this, a mark of some kind should always be fixed to the plant in small gardens; or when a new gardener is employed, its situation should be pointed out to him." They have much to answer for, those jobbing gardeners. The American Cowslip is perhaps safest in a pot in a cold frame.

Antirrhinum majus—Garden Snapdragon. In French, Mufle de Veau, Calf's Muzzle, and Gueule de Lion, Lion's Mouth.—Has produced numerous varieties, one of the most esteemed of which is striped with red on a white ground, like a carnation; others are shaded with orange and yellow. Prefers dry, loamy, or calcareous soil; an exceedingly ornamental plant for the tops of walls. Seedlings produced in abundance, but not to be depended on. Propagate choice kinds by cuttings from the young shoots every year.

Aquilegia vulgaris—Columbine,—so called because the flower can be separated into portions, each of which resembles a *columba*, or dove. In French, Gant de Notre Dame, or Our Lady's Glove.—Has been grown in gardens for centuries past, and varies through shades of

white, red, and violet, plain or striped, single or double. Propagated by seed or root-division. *A. Sibirica* and *glandulosa* have handsome blue flowers; ordinary soil; protection of litter in winter; apt to degenerate if raised from seed.

Asclepias—Swallow-Wort.—American plants, of doubtful hardihood in British winters. Soil, half light loam, half heath-mould. Try *A. Cornuti*, erroneously named by Linnæus *Syriaca*; roots of very vagabond disposition, flowers white, dashed with red, sweet-scented. Try, also, *A. amœna* with reddish purple, and *A. tuberosa* with brilliant orange-red flowers.

Auricula—Primula Auricula.—The florists' Auricula is a flower of old-established merit and ancient respectability, whose varieties are exceedingly numerous, and whose special culture and the secrets belonging to it, with the rules and tricks of practised fanciers, would fill a voluminous treatise. Such Auriculas are grown in pots, in light soil in damp climates, in somewhat stiffer where the atmosphere is drier. The compost is made up of sandy loam and leaf-mould, with varying proportions of rotten cow-dung, rabbit-dung, sheep-dung, thoroughly decomposed hotbeds, and other mild manures, according to the local recipe. Auriculas are Alpine plants; therefore they suffer not only from severe frosts, but from sudden changes of temperature and humidity. During heavy rains, it is usual to lay the pots on their sides; they should catch only the morning and the evening sun. Auriculas, if even of only ordinary merit, require and deserve the shelter of a cold frame to protect their blooms from injury. Propagate by offsets, taken off after flowering, or in autumn; for new varieties, by seed sown as soon as ripe in shallow pans of heath-mould, slightly covered. Protect the young plants in a frame till they have five or six leaves, when they may be pricked out in separate pots and treated as adults. The common border Auriculas are usually called *Bears' Ears*, and only require a somewhat moist and shady situation, with occasional division of the root.

Campanula—Bell-flower, Hare-bell.—The Canterbury Bell, *C. Medium*, is the Virgin's Violet, or *Viola Mariana* of the sixteenth century, whence it has been falsely styled the Marine Violet. A large genus, not nice about soil, of easy culture and propagation, and valuable as affording abundance of blue flowers. Perhaps the most remarkable, *C. pyramidalis*, sends up a flower-stem six feet high or more, covered with blue blossoms from top to bottom; best grown in pots, during winter at least. Propagate by offsets. The flower-stem may be trained to form arches or garlands, which will produce a long succession of bloom, if well supplied with water. *C. cespitosa*, a little tufted plant, makes a pretty edging, either in its blue or its white variety. *C. muralis*, with blue or bluish-white flowers, makes an elegant little rock-plant. *C. Medium* (a biennial), *persicæfolia, grandis, Carpatica, latifolia*, and *glomerata*, are all useful border plants. *C. punctata*, introduced in 1844 from Siberia, has heart-shaped radical leaves, and large nodding yellowish flowers, spotted inside with brown: multiplied by root-division. *C. nobilis*, from China, has creeping roots, heart-shaped leaves covered with bristles, as are the stems, and very large tubular vinous-red flowers sprinkled with darker spots. Thrives in the open air in fresh hazel loam.

Campion (Rose)—Agrostemma coronaria.—In its double variety, a useful border plant which is not particular about its soil and situation.—See *Lychnis.*

Calceolaria.—A very elegant and numerous genus, more suited for the greenhouse than the open garden, and composed of species some of which are shrubby and some herbaceous. The former may be used as bedding plants during summer, but none will stand our winters. The *shrubby Calceolarias* (so called because the shape of the blossoms is *something* like a shoe) are readily propagated by cuttings, and require to be well supplied with water. *C. bicolor*, white and yellow, is one of the prettiest. *C. corymbosa* has bright yellow flowers. For bedding, it is best to employ only a single species by

itself, as the various species differ considerably in habit and growth. The herbaceous species, which are also tender in winter, and require plenty of water while flowering, are propagated by separation of the stool, and by seeds for new varieties, which are now very numerous, and have attained the rank of florists' flowers. It is curious that the shrubby and the herbaceous Calceolarias hybridize freely together. They all like a large proportion of leaf-mould in their soil.

Carnation—Dianthus caryophyllus.—Another florists' flower, which would occupy all the remaining space in this Book, if allowed. For what it must be, as an Exhibition flower, see Glenny's "Properties." Of the Picotee, that gentleman pronounces, "The properties of form are similar to those of the Carnation; but the distinction between Carnations and Picotees is, that the colour of the former is disposed in unequal stripes, going from the centre to the outer edges, and that of the Picotees is disposed on the outer edges of the petals, and radiates inwards; and the more uniformly this is disposed, the better." The choicest varieties of both these flowers are named; and new ones, raised from seed, are constantly appearing in the Nurserymen's advertisements, for which see the *Gardeners' Chronicle*. The wild Carnation, like several other species of Dianthus or Pink, is found growing luxuriantly on the tops of walls and similar arid spots. In the south of Europe, the garden Carnation is treated accordingly, and delights the casual passenger by displaying pendent heads of flowers in unlooked-for sites. The fact gives a hint in respect to culture; Carnations are injured by too much moisture. In beds, they are usually grown in light rich mould, composed of calcareous loam, silver-sand, leaf-mould, and rotten cow-dung. A lady betrayed the secret of her great success with Carnations, by setting her foot on the bed, wherein it sunk ankle-deep. Perhaps the good drainage thereby insured was literally at the bottom of her triumphs; for pot Carnations have mostly the earth pressed firmly down about them. Propagate, and also maintain the excellence of

good kinds, by layering every year after the flowering season. Make a slight slit in the underside of the shoot, at the point where it will be imbedded in the earth, immediately below a joint or bud. Keep the slit open with a small slip of wood, peg the layer down with a small crook-stick, and cover it with light earth. Carnations may be also increased, after blooming, by "pipings," *i. e.* the ends of shoots *broken off* at a joint, not *cut*, so as to form a short pipe-like cutting. Some cut off the tips of the leaves, which in Carnations and Pinks is technically called the "grass." The pipings then are made to strike root, under a hand-glass, in a mixture of leaf-mould and silver-sand. Pinks are more generally piped, Carnations layered. As the flower-stems rise, they must be supported by sticks. Very double flowers, which would burst their calyx, are held together by a twist of thread, a disk of card, and other means; and fastidious florists have even tweezers, brushes, and scissors, to dress and arrange the petals. Double Carnations will produce seed, which should have the preference for raising new varieties. Sow in earthen pans, in spring; and prick out the plants, in prepared beds, when they have made six or eight leaves. The following season will give you the result of your lottery.

It is questionable whether the *Tree Carnation, D. fruticosus*, has a just right to a distinct specific name; but it is well worth cultivation, from its upright, shrubby habit of growth, which adapts it for training to a trellis in the conservatory, or even in a pot, and also from its flowering nearly all the year round, if kept in a greenhouse or a warm room during winter. The flowers are sweet-scented, and are tinted with divers colours, white, straw-colour, pink, red, and crimson. N.B. In layering Carnations, water *very* sparingly two or three days beforehand, in order to render the shoots more flexible. The Tree Carnations are sometimes so tall and stiff that it is impossible to layer them by bending them to the ground. In that case, the shoots are made to pass through small pots of earth, that are temporarily supported or suspended at the required height.

Chrysanthemum—Pyrethrum of modern Botanists.—The garden Chrysanthemums are said to belong to two species; *P. Sinense*, the Large-flowered Chrysanthemums; and *P. Indicum*, the Pompone, or small-flowered varieties. Of both these, there are very many named sorts; and new varieties are constantly appearing, throwing their predecessors into the shade, by the charm of novelty, if not of beauty. Chrysanthemums are of the easiest culture, by root-division in early spring, by cuttings in April and May, and by layers in July and August, which will strike root, bear transplanting, and flower the same summer. A light rich soil and plenty of moisture, is all they require. To keep them dwarf, for pots, constant shifting into a size larger is a usual mode; but from shoots taken shortly before the formation of the flower-buds, and struck under glass, in heat, very pretty dwarf plants are often obtained. The Chrysanthemum, which would be admired at any season, is specially valued as being the last showy flower of the year. But out-door plants are at the mercy of the weather, which *may* allow them to bloom, or may not. A few choice chrysanthemums deserve a place against a south or east wall; there they will bloom a little earlier, and also enjoy a little shelter. Most gardeners, however, bestow their labour on pot-culture, removing the plants into a frame or greenhouse at the first symptom of frost and snow. Chrysanthemums offer great variety of form as well as of colour: there are the Quilled, the Tasselled, the Incurved, the Clustered, the Ranunculus-flowered, the Marigold-flowered, and the Aster-flowered.

A dozen good Chrysanthemums: the Queen, blush; Vesta, ivory-white; Nonpareil, rosy-lilac; Sulphurea pallida; Themis, rose; Defiance, white; Beauty, peach-blush; Marguerite d'Anjou, nankin; Madame André, rose and white; King of Crimsons; Calypso, lilac; Rolla, purple.

A dozen good Pompones: Mont Blanc, white; Ariadne, red; Reine des Anemones, white; La Pygmée, yellow; La Ruche, blush; Riquiqui, plum-coloured; Cedo nulli, white tipped with buff; Bijou d'Horticulture,

sulphur-white; Cinderella, lilac; Drin-drin, bright yellow; Modèle, white; Jonas, bronzy-yellow and crimson.

Cineraria.—Star-shaped flowers, subshrubby and herbaceous, most brilliantly tinted with white, pink, blue, crimson, purple, and violet, in the richest hues. It is a pity that they are as good as useless in the garden, from their tenderness, combined with the early period at which they form their flower-stem. As pot-plants, for indoor decoration of the parlour-window, the greenhouse, or the passage-conservatory, Cinerarias are invaluable, as they may be had in flower from December to May. They will grow from seed, cuttings, and divided roots, in ordinary light rich garden soil, which should be kept rather moist than dry. The African Cineraria, or rather Aster, *Agathœa amelloïdes*, or *cœlestis*, is a very old-fashioned, almost forgotten window-plant, with the curious combination of very light sky-blue rays surrounding a yellow disk. It is tender, and likes light rich soil, in common with other Cape plants, and strikes easily from cuttings. It deserves to be patronized as a bedding plant, and to be rescued from its present obscurity. In floriculture, a resuscitation is sometimes even more interesting than a novelty.

Cobœa scandens.—A climber, with large dull purple flowers, useful for its rampant growth. The roots *may* survive the winter, with protection, in the open ground; but for safety, raise plants every year, from layers or cuttings, to be kept in pots till the return of spring allows them to be planted out in a warm aspect, in good hazel loam.

Coltsfoot (*sweet-scented*).—The *Tussilago suaveolens* of other days, is now *Nardosmia fragrans*. Its flowers, with a powerful heliotrope-odour, appear in winter, before the leaves. Will grow in any moist loamy soil, from slips of the root; but will become troublesome, if allowed to have its own way too much. Give it an inch, it will take an ell.

Columbine.—See *Aquilegia*.

Commelina tuberosa.—A Mexican plant, whose tuberous roots *may* pass the winter outdoors, if sufficiently covered with litter and leaves. Some take them up every autumn, while others raise fresh plants from seed, on a hotbed, every spring. The bright azure-blue of the flowers has a pretty effect when grown in large patches, or in beds.

Cranesbill—Geranium, of many species.—The Cranesbills which will live with us as perennial border plants, though pleasing, are not sufficiently handsome to show cause why they should not be transferred from the garden to the shrubbery. One, the blotched-leaved geranium, has been recommended as a fodder-plant for cattle. Propagate by root-division.

Crowfoot.—See *Ranunculus*, in Tuberous Flowers.

Daisy (Double)—Bellis perennis.—There are Quilled, Double, and Proliferous or Hen-and-Chicken Daisies, of various shades of white, pink, and crimson. In Flanders and Germany, some trouble is taken to raise new varieties from seed, and collections of Daisies are formed. They are useful plants for making edging or small gay beds in spring; nor are they to be despised when grown in pots or boxes. Propagate by root-division,—an operation which should be performed every autumn, to insure fine and abundant flowers.

Dielytra spectabilis.—Introduced by Mr. Fortune from China, in 1846, and alone well worth the journey thither. A beautiful plant, with bright green, divided leaves, succulent, semi-transparent stems, and pendant pink and white flowers of singular form, on beholding which a London man-cook was in ecstasies, because they were, in shape, something like a turbot! Perfectly hardy in our severest winters; likes a good hazel loam; desirable either for pots, beds, or borders. Forces well. Propagate by root-division.

Escholtzia Californica.—A hardy plant whose introduction caused a great sensation amongst gardeners. Its bright-yellow flowers contrast strikingly with the deep-cut glaucous foliage. *E. crocea* is a darker, saffron-tinted species,—or variety. Some plants display addi-

tional petals, which encourages the hope that double flowers may hereafter be obtained. Sow the seed as soon as ripe.

Evening Primrose.—*Œnothēra* (it ought to be pronounced with the *ē* accented long) is the Greek name of a herb which we are unable to specify now. It cannot have been an Evening Primrose, because they all come from America. Some are biennial, seeding freely; others are perennial, like the very pretty *Œ. tetraptera*, or Four-winged Œnothēra, which sends up stems covered with a succession of large white flowers from July to October, and is readily propagated by runners from the root, in any garden soil. The two commonest yellow Evening Primroses are, *Œ. suaveolens*, which opens its sweet-scented flowers at the approach of night, and *Œ. serotina*, of more shrubby habit, but equally prolific of flowers. These will become almost weeds in a garden, from their rapid multiplication by seed. *Œ. macrocarpa* produces handsome yellow flowers all summer long. Propagate by cuttings and root-division. *Œ. Drummondi* is a tenderer yellow-flowered species. *Œ. speciosa*, from Louisiana, has sub-shrubby trailing stems; oblong lanceolate indented leaves, pubescent underneath; large white flowers in bunches, sweet-smelling towards night, appearing from July till stopped by frost. Requires preservation from excessive moisture in winter. *Œ. rosea*, from Mexico, is hardy, has oval, pointed leaves, produces numerous pink flowers from June to October, and is reproduced abundantly from self-sown seeds. *Œ. purpurea* is a North American annual, which may be either sown where to remain, or be pricked out from a nursery-bed. *Œ. acaulis*, Stemless or Dandelion-leaved Evening Primrose, from Chili, is a hardy perennial, bearing large white flowers tinged with pink. It will be thus seen that the Œnotheras afford useful materials for keeping a garden gay. The tenderer kinds are apt to suffer from the *dampness* of an English winter.

Everlasting.—More than one genus of plants is known by this name amongst gardeners. *Gnaphalium orientale*

is the Yellow Everlasting, of which such enormous quantities are sold, in the shape of garlands and crowns, outside the cemeteries of France, to hang about the graves of relations and friends. This Everlasting is a perennial, low, cottony plant, thriving best in a warm, light, dry soil. *Helichrysum bracteatum*, the annual or large-flowered Everlasting, produces yellow flowers, and only requires to be sown in spring; there is a white variety. *H. macranthum*, from Australia, with white flowers tinged with various shades of pink, which have varied considerably since its introduction to this country, must be grown in heath-mould, and treated as a tender annual. *Helipterum eximium*, *speciosissimum*, and *humile*, are Cape Everlastings; require pot and greenhouse culture, in heath-mould. *Xeranthemum annuum*, Purple Everlasting, is an annual, rising half a yard high, with cottony stems and leaves. Must be raised on a hotbed; and is grown best in pots in rich sandy soil, although it will flower well in a warm dry border, in fine summers. The coarse white Everlasting of old farm-house gardens is little better than a troublesome weed. Dried Everlastings are made to assume various hues by dyeing; the taste is questionable. In drying the flowers for winter bouquets, cut them before they are *fully* expanded, and keep them *suspended* heels upwards till they are perfectly stiff.

Foxglove—Digitalis purpurea.—A native plant, which adorns the rocky slopes of Scotland and Wales with its bold and taper spikes of crimson flowers, delicately spotted within. There is a white variety, which, together with the original, well deserves a place in the garden. Biennial, though, in point of fact, the stool will often prolong its existence by dividing into offsets. Sow the seeds as soon as ripe, and prick out where to remain when large enough. The same culture is applicable to all the species, such as *D. grandiflora*, from Switzerland, with large yellow purple-spotted flowers; *D. obscura*, from Spain, with small rusty flowers and shrubby stems, tender in winter; and *D. ferruginea*, a hardy perennial, with flowers yellow outside and white within. The Fox-

glove is a poisonous plant, employed in medicine to diminish and deaden the action of the heart. Due caution must therefore be observed in not carelessly nibbling and chewing its leaves,—a foolish habit in which some people indulge whenever they happen to enter a garden.

Geum—Herb Bennet; Benoit, in French: all which means no more than *Benedictus*, or Blessed.—A genus more remarkable from having been one of the favourites, the whims, the caprices of the great Linnæus, than for anything else. It is hard to say what, in the *Geum rivale*, for instance, a British meadow weed, could so take the fancy of the Master. It is impossible to account, logically, for attachments and sympathies. The handsomest Geum, perhaps, is *G. coccineum*, Scarlet Bennet, a hardy perennial, with radical pennated leaves having very large terminal leaflets, sending up a branching stem half a yard high, which produces, during the summer, a succession of scarlet flowers. Requires a light soil and a warm exposure. Multiply by seed and root-division. There is a double variety.

Gentian — Gentiana. — An Alpine genus of great beauty, whose leading characteristic is that they are both bitter and beautifully blue, though some are yellow. Seen on the exposed ridges of their native mountains in May and June, they look like brilliant bits of sky that have dropped on the earth. *G. acaulis*, Dwarf or Stemless Gentian, is sometimes used as an edging. It is better in *a bed*, in heath-mould, by itself, requiring a half-shady, neither wet nor dry situation. Propagate by offset-shoots, and by seeds sown as soon as ripe *on* heath-mould, and not covered. *G. verna*, same intense blue colour and culture. *G. purpurea* has yellow flowers speckled with purple. *G. lutea*, with large yellow flowers, is the species whose roots furnish the bitter tonic medicine, the gentian of the apothecaries. Propagate by seed, in sandy loam, not too exposed to the sun. *G. asclepiadea* and *saponaria*, from North America, have both blue flowers, and require the same treatment

as the Dwarf Gentian. The whole of this family of mountaineers abhor the smoke and dust of towns, and like in winter something that will answer the purposes of their homely native coverlid of snow.

Geranium.—Count the sands of the sea, and then count the varieties of Geranium. In the garden, they are only serviceable as bedding-plants, for summer show. Their propagation and preservation during winter is almost a business by itself, engaging the attention of nurserymen who sell them by hundreds and thousands in spring, and who receive in the aggregate immense returns, if they do not make large profits, as they ought, from their sale. During March, April, and May, the gardening journals teem with advertisements relative to bedding geraniums, which may be generally ranged in two classes, the Scarlets and the Fancies; there are white-flowered geraniums, with the foliage and habit of the Scarlets, which may be effectively combined with them in a bed. For any of these, recourse may always be had to the nurseryman, at a reasonable rate; still, those who like to be independent, may strike an abundance of cuttings during summer, and winter them in the dwelling-house by all sorts of expedients. Scarlets may be turned out of their pots, and hung up in a cellar with their balls of earth; Fancies will not bear such unceremonious treatment. After every available corner or window-sill has been occupied, still, observes the Calendar of the *Gardeners' Chronicle*, February 16, 1856, "the demand for bedding-out plants in the spring is frequently greater than the room devoted to their wintering can supply. It will in this case be necessary to commence propagating to make good the deficiencies. For all the soft-wooded and free-growing plants, a common dung-frame, having a slight bottom-heat, will suffice; fill up to within twelve inches of the glass, upon which place four inches of dry sandy soil, in which the cuttings may be put directly you can procure a young growth for the purpose. As the display of flowers during the early summer months depends mainly on the health of the stock at

planting time, it will save labour and increase the size and healthiness of the plants to turn them out of their pots or cutting-pans into low pits or frames; and a light sandy compost will serve for them to grow in. If six inches of this is placed over a very light bottom-heat, the plants will soon make rapid growth; and you will have the advantage of an abundance of cuttings for propagation, if wanted. Calceolarias, Petunias, Verbenas, and such things, answer best for this; but where time and pot-room are objects, Scarlet Geraniums, and nearly every variety of bedding-out stuff, may be managed on the above plan. Before planting time, the plants should be checked by raising them once or twice with a spade. Put in root-cuttings, in a brisk bottom-heat, of Bouvardias, and some kinds of geraniums difficult to strike in the ordinary way, or of which cuttings are scarce to be got."

Golden Rod—Solidago.—In general, tall, ugly things, flowering in autumn, only fit to serve as a screen for a pig-stye, or to be stubbed up and burnt with the rest of the weeds and garden refuse. We are possessed of more than sixty species; too many, by half, and not worth naming. Propagate, if you will, by root-division. Will grow anywhere and ornament nowhere.

Grass.—Besides their utility for lawns and edgings, many of the grasses, or gramineous plants are decidedly ornamental. Both the Quaking Grasses, *Briza media*, a perennial, and *B. maxima*, an annual species, serve for winter bouquets, and are pretty while growing. Feather-grass, *Stipa pennata*, has its glumes elongated into something like a Bird-of-Paradise plume; grows in any dry soil, and increases by tillering at the root. The Cotton Grasses, *Eriophorum*, of which three or four species grow wild in England, are seldom seen in gardens, simply because they must have a *marsh* to grow in; but their singular white tufts are worth some trouble to introduce as ornaments to the margin of a pond. Fraser's Sedge, *Carex Fraseriana*, merits culture in similar spots. *Arundo Donax*, is a bold tall reed, which will support our win-

ters when not too severe, and in good deep soil will send up noble stems from ten to twenty feet high, producing an Eastern, jungle-like effect. But our summers are scarcely hot and long enough for this fine reed. In the south of Europe and the Levant, it is largely grown to serve as vine-props, stakes, and many of the purposes for which bamboo is employed. Painters also are fond of placing it as the mock sceptre in the hands of the Suffering Jesus. Multiply by root-division. Offsets best strike root on a hotbed. Do not cut the old stems till spring, just as the young buds are beginning to start. A magnificent diœcious grass, *Gynerium argenteum*, which appears to be hardy in England and Ireland, has lately been introduced from South America. It is too large for any but extensive gardens; those who desire plants, can obtain them from Messrs. Henderson and other first-class nurserymen.

Flax—Linum.—A large genus, with rather dangerous cathartic powers, and pretty flowers, in shades of blue, yellow, red, and violet, whose petals are extremely short-lived. The most ornamental species are greenhouse plants, of shrubby and sub-shrubby growth. The common textile Flax, of which linen is made, is frequently sown in gardens as an annual. Its azure blossoms plead in its favour; and it is right to make young people familiar with the aspect of a plant of such extreme utility. See our Book on "Flax and Hemp." *L. montanum* is a blue-flowered perennial of the same hardiness as other Alpines, and likes to be shifted after blooming.

Forget-me-not.—The true plant is the Water Mouse-Ear, *Myosotis palustris*, a charming weed which grows wild in abundance in damp meadows, and sends forth roots freely from its trailing stems. To have dwarf pot-plants, strike cuttings in gentle bottom-heat in early spring, selecting terminal shoots, and giving all the light and air possible, with plenty of water. The Parisian gardeners drive a considerable trade in this pretty favourite. *M. sylvatica*, which grows naturally in drier situations, is also cultivated for its blue flowers. *Mer-*

tensia Sibirica, the Siberian Lungwort, removed by modern botanists from the genus *Pulmonaria*, with heart-shaped leaves, and bunches of five or six blue flowers, is also sometimes styled Forget-me-not, but incorrectly. It thrives in a moist, half-shady spot, and increases rapidly at the root.

Fumitory—Fumaria of the old botanists, *Corydalis* of the moderns.—The Fumitories have long enjoyed, and may still enjoy, a certain consideration as pleasing, modest spring and summer flowers, unless it be their fate to retire before the presence of their beautiful relatives, Dielytra. The Tuberous Fumitory, *C. bulbosa*, blossoms in April, and bears a bunch of flowers whose colour varies. Quite hardy. *C. nobilis*, with a perennial taproot, is of taller stature, and has yellow flowers slightly tipped with purple. Requires heath-mould; is propagated by slips of the root. *C. lutea* has white and yellow flowers, likes stony ground, and is suitable for rock-work. *C. sempervirens*, or more appropriately *glauca*, as *evergreen*, is a strange title to bestow on an annual plant, from Canada, has purplish flowers intermingled with yellow, and when once introduced will come up self-sown.

Hepatica triloba, or *Anemone hepatica* — charming spring plants, universal favourites, in varieties of white, red, and blue, single and double. Thrive best in light loam, in a half-shady, half-moist spot. The flowers appear before the leaves, which succeed them, and cover them soon after the petals have fallen. In December, not before, cut off the old leaves with a pair of scissors, which will allow the flowers to display themselves unencumbered by dead foliage. Propagate the double varieties by division of the stools, not too often. The single Hepaticas may likewise be thus increased, and also by seed, which continues green, although ripe, for nearly two months, and falls at the slightest touch. Watch for its maturity, and sow immediately after gathering.

Hollyhock—Althæa rosea.—In French, *Passe-Rose* and *Rose Trémière.* Theoretically a biennial, but practically a hardy perennial, from the way in which it in-

creases by offsets. A noble and useful garden flower, either in avenues or clumps, standing singly or collected in beds. The Dutch are fond of growing it as dwarf as possible, in pots. It is only of late years that the English have regarded it as a florists' flower, naming the choice varieties. Mr. Bircham, of Hedenham Rosary, Norfolk, was one of the first to direct the attention of the public to its merits; and now the French and English gardeners are engaged in a friendly rivalry as to which can show the best Hollyhocks. Double flowers only are in esteem at present. For new varieties, sow the seed in March, duly cultivate the plants during summer, and in October plant them where they are to flower. The Hollyhock is a gross feeder; any good garden soil will suit it, but on a deep, moist, rich loam, it succeeds the best. The finer kinds are largely propagated by eyes, which are taken off in summer, and planted in a pit under glass, in light sandy soil, placed over a gentle bottom-heat. As some kinds only are raised true from seeds, plants from cuttings will mostly be preferred to seedlings. At the time of final planting out, if in spring, the state of the ground is of great importance. To use a common gardening phrase, the earth should "move like an ash-heap" at the time this work is done. It is better even to wait a fortnight beyond the most advantageous season, than to plant when the ground is wet and clammy. The plants should be set firmly in the ground three feet apart, not too low, pressing the soil well round the neck with the hands, or by a gentle stroke of the foot. This done, watering must be attended to, if the season be dry, using weak liquid manure, breaking the surface of the ground with a hoe the day after the water is given. When the flower-stem rises, it should be fastened to a stake firmly fixed in the ground at, or soon after, the time of planting; otherwise, some tempestuous gust will be sure to prostrate the plants in the height of their beauty. Hollyhocks are also propagated by grafting,—the less preferable mode. Mr. Paul (see his "An Hour with the Hollyhock") enthusiastically lauds this flower

for its effectiveness in garden scenery. "The Hollyhock," he says, "is a capital plant for the borders of plantations or shrubbery walks. It forms a finer distant object in such situations than the Dahlia, is less lumpish, and continues blooming to a later period of the year. Again, it may be planted to advantage in the background of an herbaceous border, so that the lower part of the stem is hid from view by the plants in front. In both these situations it may be planted singly, in irregular lines, or in groups of three or five. And here, perhaps, the less choice kinds are more in character than the finest, as a high state of culture is neither convenient nor expected. To be effective *en masse* is all that is looked for, and the showiest should be chosen, the hardy kinds of brilliant colours, and left to assume their natural form of growth. It is sometimes said that it is not a suitable plant for small gardens. I think, however, it may be agreeably disposed there in avenues, or in groups of three or five near the boundary, filling up in front with dwarf shrubs, herbaceous, or summer-flowering plants. It appears to me anything but difficult to effect such an arrangement with this plant as shall relieve the flatness often so tiresome in small gardens. The amateur who cultivates with the view of producing the flowers or spikes in the highest state of perfection, will probably prefer planting in square beds or rows. If in beds, set them three feet apart; if in rows, three feet from plant to plant, and four feet from row to row, that one may walk conveniently between them. I need, perhaps, scarcely say, that a situation airy, and freely exposed to the sun, is indispensable, if we wish to carry culture to the highest pitch of success."

First-class English Hollyhocks: Beauty of Cheshunt, light rosy red,—one of the finest; Blushing Bride, delicate blush, spike handsome and compact; Charles Barron Improved, salmon pink; Darius, orange-buff, large and showy; Diana, rosy peach, edged with carmine, shape perfect; Glory of Cheshunt, clear yellow, spike large and handsome; Honourable Mrs. Ashley, peach, shaded

with lilac, one of the finest; Lizzy Improved, clear peach, similar in style to the last, but more brilliant; Lord Jocelyn, crimson and very fine; Louis Napoleon, silvery blush, veined with purple, and though not a show flower, very effective; Magician, cherry, with dark maroon base; Memnon, beautiful light crimson, spike large and fine; Miss Ashley, light fawn, and handsome in shape; Narcissus, clear yellow; Queen Eleanor, bright rosy peach with silvery edges, quite new and distinct; Rosy Morn, bright rose; Solfaterre, lemon-coloured, and good in form; Souvenir, purplish rose; Swansdown, white, edged with lake; and White Globe, pure white, large and compact.

First-class French Hollyhocks: Amarante, very double, dark red; Anaïs, very double, admirably shaped, mottled or rather jaspered pink; Arlequin, light violet clouded with dark violet and speckled with white; Boule de Neige, very round, double, and pure white; Chromatella, very double, dark yellow; Desprez, white in the circumference, yellow in the centre; Grand Colbert, double, perfect in shape, dark mottled red; Grand Pé-King, very double, nankin yellow; Jeune Euphémie, double, well shaped, light red; Isabelle, very double, cherry-coloured; Marie-Gabrielle, double, fleshy white; Pluton, very double, almost black; Proserpine, very double, very dark red.

By stating that the very newest varieties are not required, and by leaving the selection to respectable nurserymen, such as Paul, Bircham, and many others, a *good* assortment may be ordered with confidence, at quite a moderate expense.

Hop.—Humulus lupulus.—A graceful climber, useful for covering verandahs and balconies, and pleasing to the eye of those who can admire elegance of form independent of bright colouring. The growth of the Hop affords numerous illustrations of the Line of Beauty. Its habit of dying to the ground every autumn affords a convenient opportunity of painting or cleaning the framework up which it has climbed. Propagate by root-division; must have a deep, rich loam, well manured.

Larkspur.—Delphinium.—Hardy, herbaceous, perennial Larkspurs are the Siberian, *D. grandiflorum*, with a tall branching stem, which bears, in July and August, an abundance of flowers brilliantly tinted with a cobalt or smalt-like blue. There is a double-flowered variety. Propagate by seed and offsets. Tall Larkspur, *D. elatum*, with light-blue flowers, remarkable for its stature. Less-known species, all with blue flowers, are *D. cheilanthum*, var. *Hendersoni*, *D. Wheeleri*, var. *speciosum*, *D. azureum*, and *D. Barlowii*. *D. alpinum* has a bluish calyx and yellowish petals; *D. albiflorum*, from Armenia, produces pure white flowers in long bunches, which have a fine effect when the plant is vigorous. All these larkspurs are propagated in the same way; they like a warm, light, rich loam, and bear drought better than excess of humidity. *D. Ajacis* and *Consolida* are the common Wild Larkspurs of the fields. The dwarf annual florists' Larkspur produces single, semi-double, and double flowers, in various shades of white, grey, pink, red, blue, and violet. They are most effective in beds or rows. For a bed, sow the seed, saved from the most double and finely-coloured flowers, either in autumn or spring—a sowing at both those epochs, will give you a longer *succession* of bloom—in shallow drills eight inches apart. When the plants are well up, thin them out to six inches' distance.

Lily of the Valley.—Convallaria maialis.—Grows freely in light moist soil, in a half-shady spot. Leaf-mould suits it best, as most resembling the soil of its native woods. Produces seed, but is easiest propagated by its creeping roots, of which take up *a good large* patch. Forces well in a pot, in the ordinary temperature of a keeping-room. Its perfume, form, and purity of colour combined, render this plant a universal favourite. Its near relations, the Solomon's Seals, *Polygonatum vulgare* and *multiflorum*, of less humble stature, thrive under the same culture as the Lily of the Valley.

Lobelia cardinalis, the Cardinal Flower, and also *L. fulgens* and *splendens*, have been held in esteem as bedding plants, but have gone somewhat out of fashion.

They are propagated by offsets, which must be potted separately, require abundance of water, as they naturally grow by the edges of ditches, and require the protection of a frame or greenhouse in winter. The above produce bright-scarlet flowers on tall upright spikes. *L. syphilitica* and *cœlestis* are of humble growth, and produce a long succession of light, bright-blue, small flowers, during the latter part of summer; charming plants for bedding or borders, but must be wintered under shelter. Propagate by cuttings and root-division; by seed also, if you can get it. *L. ramosa*, from Australia, has large cobalt-blue flowers. Sow in autumn, winter in a frame, and plant in the open ground in spring. *L. heterophylla*, a pretty, blue-flowered annual, taller than the preceding, also from New Holland, requires the same culture; as does *L. bicolor*, from the Cape, a perennial, flowers white and blue.

London Pride—Saxifraga umbrosa.—From the Alps; forms a pretty edging with its rosettes of leaves. Clip the flower-stems close with a pair of shears, as soon as the period of bloom is over; increases troublesomely by offset suckers. Heart-leaved Saxifrage, *S. cordifolia*, from Siberia, with large leaves in proportion to the size and number of its dull-pink flowers, scarcely deserves cultivation. *S. granulata*, a native plant, is grown, as a double variety, for its pretty white flowers. *S. crassifolia* is in repute amongst village doctresses, for its leaves, as a cooling application to blisters and wounds in winter when beet and mallows are not to be had. *S. sarmentosa*, from China, is a pretty plant to suspend in a pot, but will not bear our winters. Propagates itself by runners, like the Strawberry. Several other species of Saxifrage make pretty rock-plants—(their name signifies "Rock-splitter," from the supposed effects of their roots, which penetrate into narrow chinks);—but they are rather agreeable stop-gaps in the border than the claimants of rank as florists' flowers.

London Tuft, or *Sweet William—Dianthus barbatus.*—Makes a showy bed, from its shades and combinations of

white, red, pink, and crimson. Prefers light rich loam, well drained. Though a hardy perennial, is best treated as a biennial; for the stools get loose and shabby after the second year, and the heads of flowers are inferior for want of a change of soil. Sow the seed, which is produced abundantly, in a preparatory bed, well manured, in spring; in October, prick out the plants where they are to bloom, about six or eight inches apart every way. By sowing thus every year, the plants which have bloomed may be thrown away, to be succeeded by younger and more vigorous individuals. Of course it would be wrong to make the same bed produce London Tufts, or anything else, year after year. A Flower Garden requires a rotation of crops, in the same way as a farm, or a kitchen garden. Bouquet Parfait is the flattering title which the French have bestowed on the Sweet William.

Lungwort—Pulmonaria mollis.—A boraginous, rough-leaved, hardy plant, which was supposed to be serviceable in chest complaints, because its leaves are blotched with light spots, producing a distant resemblance to tuberculous consumption. Its pink and blue flowers are rather pretty; grows almost anywhere from seeds and bits of divided stool; helps nicely to furnish the skirts of a shrubbery.—See *Forget-me-not.*

Lupine—Lupinus.—There are sub-shrubby, herbaceous, and annual Lupines, mostly with pretty and abundant flowers, in simple spikes, displaying clear bright tints of blue, rosy-purple, yellow, and white. Their leaves are mostly digitate, *i.e.* composed of from eight to a dozen leaflets, which start like rays from the footstalk as a common centre; some, however, have their leaves entire. The sub-shrubby Lupines are in general evergreen greenhouse plants, though *L. Marshallianus* is deciduous. The perennial herbaceous kinds are, for the greater part, hardy in England, and are valuable border-flowers for their succession of blooms and rich colours; of these, *L. polyphyllus, Nootkatensis, latifolius, perennis,* and *argenteus,* are to be recommended; while *L. tristis,* from

California, has sad-looking brown flowers. These should be sown in pots, and planted out when they are becoming vigorous. In their earliest youth they are apt to be devoured by slugs. They are also increased by division at the root. The annual Lupines are better sown in their destined place. *L. Termis*, with white flowers, is used in the South of Europe and the North of Africa as forage for cattle, besides being ploughed in green, for manure. The most pleasing species are *L. mutabilis* and *Cruikshankii*, tall evergreen shrubs in their native habitat, though annual here; *L. varius, luteus, albus, nanus, succulentus*, and *bicolor*. The greenhouse Lupines prefer light rich soil; the others do well in any good garden-ground or sound rich loam.

Lychnis.—The Double Ragged-Robbin, *L. Floscuculi* (Cuckoo-flower), is of graceful habit, with delicate pink flowers, grows in any moist loam, and increases freely at the root. *L. Chalcedonica*, when single, offers the form of a Maltese Cross, in white, pink, scarlet, and saffron-yellow. The double scarlet variety is a brilliant flower, thriving best in light rich loam. There are double garden varieties of *L. viscaria, dioica*, and *sylvestris*. *L. Alpina* makes a pretty decoration to the rock-work, with the help of a few handfuls of fresh heath-mould.—See *Campion*.

Marsh Marigold—Caltha palustris.—An exceedingly showy native plant, whose golden petals look as if they were enamelled with lacquer. There is a double-blossomed variety which well merits cultivation, but must be located in a wet spot. Such gardens as have a marshy corner will find no lack of beautiful plants to occupy it. The flower-buds of the Marsh Marigold make a very bad imitation of French capers, and are of questionable wholesomeness.

Mesembrianthemum — Noon Flower. — An immense genus of succulents, mostly shrubby. The Ice-Plant is an annual. See our "Kitchen Garden." The flowers, of considerable beauty, white, yellow, orange, pink, and purple, require bright sunshine to make them expand.

They are all greenhouse or parlour plants; still, they love the neighbourhood of the sea, and in some few spots in Cornwall and Devonshire they stand the winter planted out on rocks, which almost daily are sprinkled by the spray of the waves. The effect of their numberless blossoms in summer is very fine; and such a collection of out-door mesembrianthemums, where possible, is well worth forming. Though succulents, they like a fair share of moisture, especially while in full growth. Propagate by seeds and cuttings.

Michaelmas Daisies—Aster Alpinus, and *multiflorus*.—Great, straggling, gawky things, which would be discarded, but that they put forth flowers, in considerable variety of white, pink, purple, and blue, when almost everything else is in the sear and yellow leaf, and are therefore acceptable to help to fill up bouquets. Propagate by root division.

Mimulus moschatus.—The Musk-plant, will produce its cottony foliage and yellow flowers in any damp, shady spot; the same of the Scarlet Mimulus, *M. cardinalis*. From *M. guttatus*, *rivularis*, *variegatus*, and perhaps others, very many cross-bred varieties have been raised from seed, which have obtained a certain reputation as florists' flowers. They are more or less hardy, strike freely from cuttings, like a mixture of sandy loam and heath-mould, with abundance of water. In fact, they are almost aquatic plants. The blossoms, though ephemeral, are produced in long succession; and, if we had not so many better things, Mimuluses might boast of their floral merits and pretensions, although inclined to be weedy.

Moneywort—Lysimachia nummularia, i.e. Loose Strife, or Stopper of Contests.—A native plant in meadows and moist woods, useful as a pendant fringe for rock-work, vases, &c. In boxes, it makes an elegant border to the floor of a balcony. Its foliage is neat and regular, and a little yellow flower appears at the foot of every leaf. Little bits of the root will grow in peat earth. Give plenty of air, sunshine, and water.

Pansy, or *Heart's-ease*—*Viola tricolor.*—A modern result of horticultural skill and patience. There are now innumerable named and unnamed varieties, whose leading "property" is that they must be circular in general outline, and flat and very smooth at the edge: every notch or unevenness is considered a blemish. Choice varieties are propagated by cuttings taken from the ends of the shoots, in spring, cutting them off just below a joint. Root-division is also an available mode; but the shoots must be shortened when too long or straggling. All good Pansies should be thus divided annually, or renewed by cuttings, to prevent them from degeneration. Those operations also serve to transfer the plant to fresh soil, which should be light and rich, well drained, but not dry. Many amateurs find great amusement in raising Pansies from seed saved from the finest flowers. These are grown in shallow pans of leaf-mould enriched with old manure; and are pricked out, when large enough, to the bed wherein they are to show their master what they are. Pansies like an open, airy, sunshiny spot. In close places, they soon spindle up, straggle about, and pine into good-for-nothingness.

Pentstemon campanulatus.—A Mexican plant, with slender flower-stems, half a yard high, or more, which are surmounted by long tubular blossoms, dark-red outside and whitish within. Is useful as a bedding plant, from the long continuance of its flowering season. Propagate by seeds, cuttings, and parting the stool. Seedlings vary greatly, both in foliage and colour of their flowers. Must winter in a cold frame, or green-house. *P. cyananthus* is a hardy perennial, producing long spikes of beautiful blue flowers. *P. digitalis* is a robust plant, which has sported into numerous varieties. *P. Cobœa*, from Texas, has large flesh-coloured flowers, striped with carmine. A very handsome plant in the open border, but delicate. *P. glandulosus*, from North America, is hardy, with large velvety light-violet flowers. It will thus be seen that, as a genus, the Pentstemons are very uncertain in respect to hardiness, though they are all

more or less ornamental, and well deserve to have winter shelter bestowed upon them. *P. Murrayanus*, requiring heath-mould and protection from the frost, is a striking plant, with terminal bunches of vermilion blossoms. The specific names of other Pentstemons are indicative of their beauty; as *speciosus, gracilis, venustus, pulchellus, roseus*, and so on.

Perennial Aster—Aster spectabilis, cæspitosus, argenteus, Parisiensis, Reeversii (which makes a pretty edging), and several other species sporting into varieties and hybrids. The smaller their stature, and the more herbaceous their habit, the more desirable are they as border plants. Will thrive in warm light loam, and are increased readily by root-division.

Periwinkle—Vinca major and *minor*, the Greater and Lesser P.—Native trailing evergreens, which spread rapidly at root, and produce abundance of sky-blue flowers in spring, in light moist soil and somewhat shady situations, and are suitable for covering banks, or for forming edgings of a certain breadth. There are white-flowered and variegated-leaved varieties of the Lesser Periwinkle. Both are readily propagated by cuttings of their creeping shoots. Some of Rousseau's most sentimental effusions were called forth by the Periwinkle flowering amidst the mountains of Switzerland. *V. herbacea*, a Hungarian species of still more humble growth, requiring the same soil and culture as the preceding, has varieties with double blue and also double reddish-purple flowers. The Madagascar Periwinkle, *V. rosea*, is a stove-plant, with dark shining green leaves, with pink flowers darker in the centre, a variety of which has white flowers with a crimson centre. A pretty pot-plant, with the family habit, flowering, in its place, all summer long and part of the winter; but a greenhouse even is not warm enough for it to grow thriftily.

Phlox.—There are robust Phloxes, hardy perennials, of considerable stature, which help to fill up vacancies in extensive pleasure-grounds; there are others, tenderer, more delicate, of humbler growth, in request as free-blooming

bedding-plants. Perhaps the prettiest of these is *Phlox Drummondi*, an annual with a twiggy stem and somewhat downy foliage, whose lower leaves are oval and the upper lanceolate. It produces its pink flowers, which are darker in the centre, all summer long. It varies into numerous shades of rose and crimson. Propagate by seed in light rich loam. Admired kinds may be perpetuated by cuttings for a longer or shorter lapse of time. Phlox, *i.e.* Flame, is scarcely an appropriate name for the genus, as its prevailing colours are white, lilac, blue, blush, and pink. *P. ovata* and *nitida* are exceptions, as having bright-red and violet-red flowers. All the species belong to the temperate regions of North America; one only, *P. Sibirica*, is found in the north of Asia. The Phloxes are in general robust plants which thrive in ordinary garden-soil, and are increased by cuttings, stool-division, and seed: the latter mode has originated many varieties, especially from *P. acuminata*. *P. suaveolens*, itself a variety of *P. maculata*, has produced striped flowers that have been much admired. But it is possible that, with the exception of *Drummond's*, the beauty of the Phloxes has been over-vaunted.

Picotee.—See *Carnation.*

Pimpernel—Anagallis arvensis.—A red-flowered native, which would be admired were it rare and difficult of culture; but it is only a weed. *A. Monelli* has an abundance of deep-blue flowers all summer long, but is tender in winter. Strike from cuttings, in heath-mould, under a bell-glass. Other less-known Pimpernels deserve patronage; *superba*, *Philipsi*, *grandiflora*, and *rosea*. There are shrubby Pimpernels with double flowers; all greenhouse plants.

Pink—Dianthus plumarius.—A florists' flower, in great variety; is, however, more generally looked upon as a border than a bedding plant; most acceptable in bouquets for its rich, yet delicate perfume. In any light warm garden-soil it only requires piping or layering every second year to prevent it from getting weedy and shabby in foliage and inferior in bloom.—See *Carnation.* The

China Pink, *D. Sinensis*, though mostly single, is exceedingly pretty, from its brilliant contrasts of colouring. Treat as a hardy annual, sowing on gentle bottom-heat, and pricking out when its stature and the season render expedient. It is really a biennial, with an extensible term of existence, like many others. Therefore, any very prepossessing variety (and there will be sure to be many in a large sowing) may be retained by detaching and striking the shoots at the bottom of the flowering-stem.

Polyanthus—Primula elatior, or *vulgaris*, var. *caulescens*.—This popular cottage-garden flower is probably the offspring of hybridizations between the Cowslip and its more showy relative, the Oxlip. But the transition, in a cultivated state, from Primroses to Cowslips, from stemless flowers to those with stems, is so gradual, that it is not easy to define, first, which are species, and, secondly, which are varieties. Single Polyanthuses only are Florists' flowers, and deemed worth the honour of having "properties" required of them; but many of the double varieties are very pretty, as well as those called the Hose-in-hose kinds, and those with coloured calyces, which continue ornamental after the petal has disappeared. The genus Primula delights in leaf-mould, or mixtures of peat and sandy loam, kept somewhat moist, in half-shady situations. They make gay borders or edgings at the foot of north-east or north-west walls, or under lofty trees. In pots, unless allowed to bloom in the open air, their colours are less brilliant. Double kinds are increased by dividing the stool. The raising of seedling Polyanthuses is a very amusing task, in consequence of the immense variety obtained. Sow the seed, as soon as ripe (though it will keep pretty well for a year or two), *on* leaf-mould and sand, covering it but slightly or not at all, either in shallow pans or in a preparatory bed. As soon as the plants are big enough to be handled, prick them out in the place where they are to flower, and water and shade till they have taken hold of the ground. Polyanthuses and Primroses are not fond of manure.—See *Primrose*.

Potentilla.—The herbaceous species, whence many

varieties have been obtained, have very much the habit of Strawberry-plants, with flowers mostly in shades of pink, red, and crimson, of easy culture in ordinary soil, and useful on rockwork. Though pleasing, they are not of *striking* beauty. *P. fruticosa*, Shrubby Potentilla, makes a thick bush, about a yard high, producing bright-yellow flowers all summer long, and hardy in good soils and sunny situations. It seldom ripens seed, but supplies the defect by abundance of suckers.

Primrose—Primula.—Double Primroses delight in the same soil and situation as Polyanthuses, but are somewhat less robust, being apt to damp off, go frost-bitten, or succumb under the repeated ravages of slugs. Somewhat disdained as florists' flowers, they still maintain, deservedly, a certain horticultural and commercial value. They do well in a raised bed of leaf-mould, held together by brick-work or other support, and thus meet the admirer's eye half-way. There are white, yellow (at least two varieties), lilac, red (several varities), crimson (ditto) double Primroses, besides mottled flowers and those which contain combinations of tints. They occasionally indulge the caprice of sending up a stem, thereby raising their flowers to an elevation of several inches above the leaves. When they execute this freak, they may be regarded as whole-coloured double Polyanthuses. Persons desirous of forming collections of double Primroses, are advised to procure them (both for excellence, variety, and cheapness) either from French or Belgian Flanders. Propagate by root-division, and keep a constant eye on choice varieties, both for their health's sake and to prevent kidnapping. Good double Primroses are exceedingly apt to make themselves scarce. *P. cortusoïdes*, from Siberia, is a charming little miniature, producing at the top of its stem a very large number of tiny, delicate lilac flowers, and requires the same treatment as the above, with the advantage that it may be raised from seed. As yet, not a common plant. The *P. Sinensis*, Chinese Primrose, is mainly useful for the winter decoration of living-apartments. It is nearly scentless, very gay, and lasts long in bloom. There are

white and various shades of pink varieties, with fringed and plain edgings, single and double. Chinese Primroses have not yet been made to render much service in the open ground. Though the roots will survive several years, they do not do much after their first season of flowering, and may be as well thrown away, to be replaced by seedlings annually raised, and pricked out in pots filled with a mixture of leaf-mould and sandy loam. There are also several Alpine species of Primula, which well deserve a nook in a shady border.

Reed.—See *Grass.*

Rocket.—The Double Yellow Rocket, *Brassica eruca*, would be rather handsome were its petals not so fleeting. Grows in any *good* garden-soil, is increased by cuttings and root-division. The Double White or Garden Rocket, *Hesperis matronalis*, is really a noble flower, when well grown, which is not always. The first essential to have fine Rockets, is a rich, deep, strong loam, even inclining to clayey, like the best wheat-lands; the next is, to shift the plant annually to a fresh spot, and divide the stools, which afford the means of propagation, as also do cuttings. The Garden Rocket varies in colour from light blush or French white, to light purple or violet. The scent of the spikes of flowers, somewhat resembling that of Stocks, is more powerful towards night; whence its generic name, *Hesperis*. Though hardy, requires looking to, and resents neglect.

St. John's Wort—Hypericum.—Yellow flowers, very similar in appearance in the different species, though varying in size. The large St. John's Wort (sometimes erroneously called Star of Bethlehem) has a very showy flower, almost filled with a silky tasselled tuft of stamens with red anthers, but of short duration. It spreads rapidly by its creeping stems, in light, dry, sunny soils, such as gravelly banks; and if not wet at root, will bloom abundantly in spite of trees overhead. Tutsan is a hardy shrubby St. John's Wort, largely employed in shrubberies and pleasure-grounds by gardeners of the last century; but it has now, for the most part, retired

from business, in consequence of the arrival of more attractive and equally serviceable new-comers. One or two Tutsan bushes may be permitted to help to form a screen of shrubs, in consideration of the days of auld lang syne.

Salvia—Sage.—See "The Kitchen Garden."—*S. splendens* forms a robust tuft that throws up spikes of scarlet flowers; a showy plant, very useful in autumn; will survive our winters, but should not remain long on the same spot, and therefore is best divided at the root in autumn, potted, and kept under a frame during winter. *S. patens* resembles the above in habit, with brilliant smalt-blue flowers, but *must* have winter protection. *S. nemoralis*, hardy, produces a long succession of small amethyst-purple flowers, which have a fine effect when grown in a large mass, or as a hedge, and which are so attractive to bees that the twiggy stems on which they grow sometimes are crowded with numerous species of the genus *Apis:* there are humble-bees, earth-bees, hive-bees, and others,—queens, drones, and workers,—all swarming together amidst the flower-forest in search of honey. *C. coccinea*, tender in winter, makes a convenient pot-plant, being in the style of *S. splendens*, but smaller and slenderer. There are numerous other gaudy species, with blue, pink, white, yellow, red, violet, and two-coloured flowers, in all more than four hundred, the majority *not* hardy in England. They are raised from seeds, cuttings, and root-division; like light rich soil, which they speedily exhaust; and require frequent shifting in pots. Old stools of the more showy Salvias, wintered in a frame, and planted out in May entire, will make magnificent tufts, and furnish a profusion of splendid bloom.

Saxifrage.—See *London Tuft.*

Scabious—Scabiosa atro-purpurea, and others. Pincushion Flower.—Well-known border plants, which retain their place mainly because we are used to them, and are accustomed to cut their honey-scented blooms to fill up the intervals in large bouquets. Sowing the seeds gives

you fresh young plants which are not nice about soil; but the stool may often be divided into rooted shoots, which is a quicker process.

Sedum—Stone-crop, Ginger, Wall-pepper, Love-chain, Gold-dust, &c.—The hardy species of this genus of succulents, mostly with yellow or white flowers, are serviceable for rock-work and artificial ruins. The Orpine, *S. Telephium*, with dull purple flowers, and which attains a height of some eighteen inches, is planted along the roof-ridge of many cottages in Normandy, where it looks like the bristles on the back of an angry boar. These hardy Sedums may be regarded rather as convenient materials in the hands of the landscape-gardener, than as *real garden flowers*. *S. Sieboldii*, amongst the greenhouse species, is an elegant plant to suspend in a pot or basket.

Snapdragon.—See *Antirrhinum.*

Solomon's Seal.—See *Lily of the Valley.*

Spiderwort—Tradescantia Virginica.—An old perennial border plant, with blue flowers varying to purple, in either case occasionally more or less double. Will grow almost anywhere, and is increased by dividing the stool. There are hothouse species, one of which, *T. discolor*, is mainly grown for the beauty of its leaves.

Sweet William.—See *London Tuft.*

Thrift—Armeria vulgaris—In French, Gazon d'Espagne, Spanish Turf, or, more poetically, Gazon d'Olympe, Turf of Olympus.—The English name is derived from its thriftiness in towns and confined situations, though its native home is on the grassy tops of cliffs whose base is washed by the waves, and whose summit is exposed to the sunshine and wind. Thrift is mainly employed for edgings, for which it is well adapted by its grasslike tufts of leaves and its numerous heads of pretty pink flowers. In the wild state even, the depth of their tint varies greatly; in gardens, there is a variety with deep crimson flowers, which is much more ornamental than the common sort. Propagate by division of the stool. For neatness' sake, as soon as the flowers are

faded, clip *their stems*, not the herbage, close with a pair of shears. *A. plantaginea*, which abounds in dry and sandy districts in the interior of France, would equally answer the purpose of an edging in gardens. *A. pseudo-Armeria*, False-thrift, from Barbary, is a magnified species altogether on a larger scale, which produces several times a year heads of rosy flowers at the top of stems half a yard high. Must be treated as a greenhouse plant in winter. The Thrifts were *Statices* in the days of Linnæus. The modern Statices are mostly greenhouse plants, of sub-shrubby stature, with pleasing rather than handsome flowers, and, like their half-brother the Thrift, fond of a sea-side residence.

Valerian.—Valeriana hortensis, and *Pyrenaica*, are common garden perennials, with white and red flowers respectively. The latter will grow and bloom well on a wall or rock-work. They have no right to take higher rank than that of hardy filling-up stuff. *V. cornucopiæ*, Horn-of-Plenty Valerian, from the North of Africa, is a tall annual, which produces numerous red flowers, and is eaten as a salad, like the Mâches (or Corn Salads, mentioned in our former volume), of which *some* people are very fond in winter and spring. Sow in light soil in spring, or better in autumn.

Veronica Chamædrys, or Earth-Oak Veronica (from the shape of its leaves),—the pretty blue-flowered Germander Speedwell of our hedges,—is the type of a large genus, which furnishes several easily-cultivated border-plants that supply a long succession of fleeting flowers, on spikes, in shades mostly varying from white to deep blue. St. Veronica was the compassionate female who, the legends tell us, offered a napkin to the Saviour on his way to the Cross. He used it to wipe the perspiration from his face, and his likeness remained miraculously imprinted thereon. The napkin itself is still occasionally exhibited to the public from a lofty balcony beneath the dome of St. Peter's, at Rome. The Veronicas are aptly named after a benevolent woman, as there is something graceful, feminine, and fragile in their

aspect. There are also greenhouse herbaceous species. Veronicas *speciosa*, *Andersoni*, *salicifolia*, and *Lindleyana*, from New Holland, requiring sandy loam and heath-mould, stand the winter outdoors in such climates as that of Cornwall in England, and Brittany in France, where they make handsome low-growing evergreen shrubs. As they strike from cuttings without difficulty, it is easy to keep up a succession of young plants in pots, in which character they will render service by flowering during the dead months of the year.

Violet—Viola odorata.—White, dull-red, and deep-blue sweet-scented varieties grow wild; there are also double white, red, and dark-blue garden sorts. The Parma Violet has very light-blue double flowers, exceedingly pleasing, but hardly so highly scented as the former; will flower under a frame from October till spring. The Bruneau Violet has double flowers, with the outer petals dark blue, the inner ones mottled with white, red, and blue. Some Violets have a greater tendency than others to commence flowering in autumn, and to continue, under favourable circumstances, throughout the winter. Such are the Russian and the Neapolitan Violets, amongst the singles; and the double red, and the Champlatreux double white or Four-Seasons Violet. Advantage is taken of these hybernal bloomers by planting them in frames like cucumber-frames, on a bed of soil composed of leaf-mould, calcareous earth, and alluvial loam. Continued crops of violets, for bouquets, are thus obtained, and they form a profitable branch of market-gardening in France. Violets are increased fast by runners and root-division. The double kinds are sometimes used as edgings, but they come into bloom somewhat later than singles. The Tree Violet is regarded as a woody-stemmed species, from the Canaries; but it may be questioned whether its erect character be not as much an artificial circumstance as the shrub-like shape of Tree Mignonnette, which is nothing but the result of training an upright stem to a stick, and pinching off the lower shoots. Besides the Sweet Violet and the Heart's

Ease, there are numerous other species, some of which are lively ornaments to a rock-work or the top of a wall, or will brighten up the barrenness of a sandy waste.

Water Lily—Nymphæa alba, the White, and *Nuphar luteum*, the Yellow; the former much the handsomest.—Useful in ponds with a muddy bottom, where gold-fish, fresh-water tortoises, &c., are kept. Procure a good large stout rhizoma at the end of summer, and sink it in its place by a stone tied to it. The Yellow Water Lily is apt to increase to a troublesome extent; so beware how you introduce it to your artificial lake. There are Chinese Water Lilies, red and blue, whose winters at home are severer than with us, and yet they cannot get through ours. It is the defective summer heat which renders them thus tender.

Willow Herb.—A large genus, many of whose species, with gay red flowers, grow wild in moist spots. The French Willow Herb, *E. spicatum*, is a tall perennial, useful for screens and shrubbery-skirts, with purplish-red flowers and blue anthers. Hardy; increases so fast at root as to become a nuisance, if you let it.

SHRUBBY AND SUB-SHRUBBY FLOWERS.

There is so gradual a transition from herbs to shrubs, and from shrubs to trees, that the terms "sub-shrubby plants" and "suffruticose trees" have been invented, to designate those individuals which occupy intermediate positions in the long series of the vegetable kingdom. If, therefore, the reader should feel inclined to cavil at the Wallflower's being included amongst the Shrubby Flowers, that climbers like the Clematis and the Passion-flower are made to enter into the same list, or that the Arbutus and the Elder rank with Flowering Trees in the present volume,—he will kindly remember that there is no room here to discuss nice botanical distinctions, but simply to pass in compact review the most desirable occupants of a flower-garden.

Althæa frutex, or *Hibiscus Syriacus*, often called

simply *Frutex* in popular gardening language.—A hardy shrub, requiring, however, a longer and hotter summer than our own, producing abundance of mallow-like flowers from August till cold weather sets in, in single and semi-double varieties, in various shades and combinations of white, pink, crimson, and purple. In Lombardy, hedges are made of the Shrubby Althæa, which are gay with a long succession of bloom. In England, it would be worth while to forward the handsomest kinds in tubs in a greenhouse, to be placed in the pleasure-ground at midsummer, as Orange-trees and Pomegranates are in the Parisian gardens. The *Althæa frutex* grows slowly, and lives to a considerable age: good loamy soil suits it best. Sow the seeds in boxes, or in a frame, in spring; prick out the young plants in separate pots, and keep them in the greenhouse in winter, for the first two or three years. Favourite kinds may be continued and multiplied by grafting. The plants are also made to serve as stocks to receive scions of the very beautiful Chinese Hibiscuses, which, however, appertain to the greenhouse and the hothouse. The affinity between the Althæas and the Hibiscuses is so close, that a few of the latter, somewhat more hardy, may be mentioned here. They are remarkable for their vigorous habit of growth, and their large flowers, which make a fine show in September. They like a light, rich, deep soil, a rather shady situation, and require to be mulched and protected with litter over the crown of their root in frosty weather. They rarely ripen their seed, and do not bear root-division well, but must be raised from imported seed. *H. palustris*, Marsh H., from North America, should be abundantly watered in summer. *H. roseus*, Rosy H., a native of the marshes of the Landes of France. *H. militaris*, with deep-red flowers, from North America. *H. speciosus*, from Carolina, is safest in a greenhouse during winter. The above succeed against a wall in maritime or insular situations, like Ireland or Cornwall.

American Allspice — Calicanthus floridus — A misnomer, in respect to the English name, which is betrayed

by the prefix "American."—The plant has no relationship with spice-bearing trees. The French name it *Arbre aux Anémones*, Anemone-tree; for its reddish-brown flowers are not dissimilar, in shape, to double Anemones. Unlike them, they exhale an odour which resembles melon and ripe apple combined. It is a twiggy shrub, with deciduous foliage, suitable for verandahs or rustic porticos, thriving in a mixture of light loam and heath-mould, and worthy of a warm sheltered corner. Propagate by suckers, or by layers half-cut through behind a joint, which should remain in the ground a couple of years. There are varieties of this Anemone-tree. *C. occidentalis*, of Dr. Lindley, is a robuster shrub, with broader leaves, larger brick-red flowers, hardier than the preceding, and less nice as to soil and aspect.

Azalea.—A large and beautiful genus, which must be treated as what are called American plants, *i.e.*, grown in heath-mould, with a greater or less admixture of sandy loam, in somewhat shady and sheltered situations, where they are never very moist nor very dry. They bear transplanting (with the ball of earth attached to their roots) and forcing well. In the American bed in the open garden, the hardy species are valuable for their early blooming in spring, and their handsome bouquets of brilliant flowers. They have the defect of being rather thin and naked, running up bare and spindle-shanked, even if they did not put forth their flowers, in various shades of yellow, white, and red, before the full development of their leaves. They are propagated by offsets, by layering, and grafting. From seeds, which are hybridized with facility, numerous varieties are obtainable. Hardy species of Azalea are *viscosa*, *glauca*, *nudiflora*, and *calendulacea*, all from North America. *A. Pontica*, with yellow blossoms, comes from the Caucasus. All out-door American plants are best grown in a compartment of the garden that is specially devoted to them.

The Chinese Azaleas are greenhouse plants. Their extreme beauty is sufficiently attested by a reference to

the Metropolitan Horticultural Shows. For their varieties, the reader is referred to the nurserymen, especially as new ones are constantly coming out. Even an imperfect list of those now grown would fill several of these pages.

Berberry.—The Common *Berberis vulgaris* is useful to stop a gap in a shrubbery, on account of its curious flowers, with their irritable stamens (which will move if you tickle them with a pin or a bristle), followed by bunches of scarlet fruit. It looks well as a standard with weeping branches. Our gardens have of late made a valuable acquisition in the Evergreen Holly-leaved Berberry, *B.* (or *Mahonia*) *aquifolium* and *B. pinnata*, both easily raised from suckers and seeds, and natives of Oregon and California.

Bignonia capreolata—Tendrilled Trumpet-flower—is the only one of its genus which can be left all the year round in the open ground. At the foot of a south wall, with a covering of litter at foot in winter, and plenty of room to spread about, it will be covered from midsummer to autumn with a profusion of tubular tawny-red flowers. Strikes easily from cuttings.

Birthwort—Aristolochia.—A genus of climbers, with flowers in general not remarkable for beauty. *A. Sipho* has enormous heart-shaped leaves, which adapt it for covering walls and trellis-work with a thick mantle of green during summer. This species, as well as *tomentosa* and *Arkansa*, are hardy in England. Propagate most surely by layers half-divided behind an eye. *A. labiosa* has a very large whitish flower blotched with blue-black, whose odour is so offensive as almost to prohibit its cultivation. The genus is medicinal, or rather poisonous. Both its English and its botanical names have reference to its effects on the human system, which have sometimes been applied to evil purposes. Hence, some gardeners are unwilling to avail themselves of the aid which its striking foliage affords.

Bladder Senna—Colutea arborescens.—Fitter for the shrubbery than the garden proper, and the delight of

children, who amuse themselves with squeezing and bursting the bladder-like seed-vessels that succeed its yellow flowers. Grows freely in any soil, preferring calcareous earth, from suckers or seeds. *C. cruenta* is a prettier and smaller species.

Bramble.—There is a double white-flowered variety of the common Bramble, *Rubus fruticosus*, which produces, from July to autumn, bunches of blossoms like miniature roses. It likes rather a damp soil, and is propagated by cuttings, or better by suckers. The Rubus genus flowers on the wood of the previous year, which should be cut out afterwards like raspberry-canes, to make room for new. There is also a double pink variety, which was found wild, in 1817, near Clion, in the department of Indre, France. Double flowers of other genera are occasionally met with wild. The common Ladies' Smock, or Cuckoo-flower, is not rarely found wild and double in meadows. *R. odoratus*, the Canada, or Flowering Raspberry, is useful in the shrubbery and in towns, for its large foliage, its late and rosy flowers, and its thriftiness in shade. Propagate by the rhizomatous runners, and cut out the old wood in spring. There is a white-flowered variety.

Broom.—The Common Broom, *Genista scoparia*, were it rarer, would be highly esteemed as an ornamental shrub, and may be so employed even as it is. Our Plantagenet dynasty took their name from the *Planta Genista*. The Spanish, or White-flowered Broom, *Spartium album*, or *Cytisus albus*, is taller and tenderer than the above, requires a light dry soil, and is propagated by seeds, or by grafting on the common Laburnum, which will serve as a stock for most of the hardy ornamental Brooms.

Brugmansia.—*B. suaveolens*, or *Datura arborea*, is a noble suffruticose Peruvian tree, unfortunately too tender to stand our winters; and *B. sanguinea* has hitherto been confined to our conservatories. But as new facts in gardening are as valuable as new cases in medicine, Mr. Robert Dowling's communication is quoted from the

Gardener's Chronicle for Jan. 12, 1856:—"A noble specimen of *Brugmansia sanguinea* grows in the pleasure-grounds adjoining Crom Castle, the seat of the Earl of Erne, county Fermanagh, Ireland. It was planted in a conservatory in May, 1845, and was then about three feet high. Notwithstanding severe annual pruning, it grew too large in a few years, and was considered scarcely worthy of a place under glass. In May, 1851, I planted it out in the open ground, having the previous autumn cut its roots three feet from the stem, and ever since it has attracted the attention and been universally admired by the numerous visitors to this beautiful demesne. At the request of some ladies on a visit here, I measured the plant last August; it was then 14 feet 6 inches high, girthed at the ground 2 feet 6 inches, and covered an area of 165 square feet. At that time it was really a beautiful plant, completely covered with flowers and foliage to the surface of the ground; I then counted 180 flowers fully expanded, with twice that number ready to open. A gentleman told me, a few days afterwards, that he had counted above 200 open on it. It would be difficult to calculate the number it produced last summer; but I would say at least some thousands, as there was a regular succession from the beginning of summer, and it has now, January 5th, many open on it. It was planted in a mixed soil, composed of loam, bog-earth, a good portion of charred matter, rotten dung, and leaves—perfect drainage of course being secured. As I learned from experience that Brugmansia will not stand our winters without protection, ever since it was planted in the open ground I each year, in October, covered it by sticking poles in the ground, 5 inches apart, the spaces between being stuffed tight with grassy moss raked from an adjoining wood. A span roof is then put on, one side of which is thatched, the other covered with sashes, which has an additional covering in long-continued frost. To make all sure, I put inside a few cast-metal pipes, connected with a stove; but even last winter, although very severe, they were seldom used, as it requires a very

great frost to penetrate through moss a few inches thick. At the same time, arrangement for free ventilation is provided. I take the protection gradually away in March and April, and altogether in May. It may be considered that the plant is not worthy the trouble thus bestowed on it; but few could see it in summer and make that remark. The branches are shortened in before covering, or it might have been twice as tall as it now is. There are many free-flowering plants, commonly occupants of the greenhouse, which I think would succeed quite as well planted out as the Brugmansia, large specimens of which would add a new and interesting feature to our pleasure-grounds. I propose planting out a few next May, with a view to their remaining out through the winter, and getting glass cases made (so that they can be easily increased in size at pleasure and removed in spring) for their protection."

Buddlea globosa.—A Peruvian shrub, with leaves which ought to be evergreen, and round heads of orange-tawny flowers. May be trained against a wall; but in sheltered situations will survive our winters in the open shrubbery, under the shelter of *lofty* trees, in light well-drained soil. Its long oval leaves, very light underneath, and its sweet-smelling bullets of deep-yellow florets, give it a certain exotic charm. Multiply by cuttings and suckers, which keep in a pot, in a cool frame, the first two or three winters. When planted out, mulching at the roots is a wise precaution. *B. Madagascariensis*, also with odoriferous yellow flowers, must winter in the greenhouse. *B. Lindleyana*, from China, with red and purple flowers, is hardier, and may at least be ventured to cover a sunny wall.

Camellia Japonica.—Beautiful evergreen shrubs flowering in spring, and forming their flower-buds so early in winter, as to render their out-door culture with us extremely hazardous, although success is attained in a few favoured spots in Cornwall, with the aid of partial protection. On this account, Camellias will *live* in many situations where they will rarely flower. In a border

backed by a high wall, or trained against the wall itself, it will not be difficult to shelter them and to keep frost from their roots by a covering of litter. The variegated red is one of the hardiest; but the original single red Camellia, on which the double varieties are mostly inarched, raised from seed, makes a splendid bush where it *can* flower in the open air. In truth, however, the place of Camellias, in the United Kingdom, is in conservatories and living-apartments. They are house-plants, and as such they must be considered, in spite of their occasional and rare presence in the flower-garden: their culture constitutes a peculiar and elaborate branch of greenhouse gardening; and their cut blooms form a considerable item in the returns of nurserymen during winter and spring in general, and at the periods of the Paris and London seasons especially.

Chinese Pæony.—See *Pæony*, in the last section.

Christ's Thorn—Rhamnus Paliurus.—A shrub whose branches are furnished, when vigorous, with several series of thorns, some straight like pins, and others bent like fish-hooks. The foliage has a certain elegance, from the regularity with which the small leaves are disposed along the twigs. The small yellow flowers are inconspicuous, while the berries have somewhat the shape of a low-crowned broad-brimmed hat. Its chief interest lies in being pointed out by the ancient tradition of the Roman Catholic Church as at least *one* of the plants which composed the Saviour's crown of thorns. The fact is far from improbable, as the Christ's Thorn is a native of Syria. In Italy it makes formidable hedges, through which vineyard-pilferers can hardly pass without leaving a portion of their garments, and perhaps sundry bits of skin and drops of blood, behind them. To grow vigorously, it requires a long hot summer. Here, it may be *kept alive* in a sunny nook, in a weak and starveling condition, hardly recognizable by those who have seen it in the South of Europe.

Cistus ladaniferus,—the Gum Cistus,—with long, lanceolate, viscous leaves, and large white flowers with a dark red centre, is one of the handsomest shrubs we have.

There are other species, with yellow, red, and purple flowers, which, though individually ephemeral, follow each other in long and constant succession during the finest summer months. Some of our native trailing species make exceedingly elegant rock-plants. The Cistuses are of various degrees of hardiness, but all like a warm, well-drained, chalky soil. Multiply by suckers, cuttings, and seeds sown on a hotbed in spring.

Clematis.—See *Virgin's Bower.*

Clianthus puniceus.—A very handsome half-creeping shrub, with pinnated leaves, from New Zealand. It is usually kept in pots, in a greenhouse, in a mixture of loam and rotten hotbed; but will stand the winter trained against a wall (especially near the sea), with the protection of thick mulching and matting in winter. There, its bunches of large pea-like scarlet blossoms are really splendid. Increase by cuttings and suckers.

Coronilla glauca.—A pretty, yellow-flowered, papilionaceous pot-shrub, with sea-green pinnated leaves, useful for parlour-windows, because its plum-scented blossoms are gay throughout the winter. Native of the shores of the Mediterranean; is increased by seeds, cuttings, and layers. *C. Emerus* is hardier and more robust, with red flower-buds and yellow open flowers. It is sometimes used to make clipped fences, where the resistance of thorns is not required. If shorn in spring, will flower in autumn.

Cytisus Laburnum, or False Ebony, from its handsome dark heart-wood.—Almost a tree; well known for its bunches of drooping golden blossoms in spring. Hardy, vigorous, and increased abundantly by seed; is used as a stock whereon to graft other more delicate Cytisuses and allied species; amongst which are *C. nigricans, sessilifolius, capitatus, Austriacus purpureus* (with pinky-violet flowers), and *albus, Spartium album*, or Spanish Broom. On one of the grass-plots in Kew Gardens there grows a curiosity interesting to hybridists,—a Laburnum between *Cytisus nigricans* and *C. Laburnum.* The plant has put forth one branch of *nigricans* and one of *Laburnum;* the rest is hybrid.

Daphne.—D. Mezereon is one of our earliest and most welcome spring flowers, acceptable to early wandering bees. The French may well call it Bois-Gentil, or Pretty Wood. Grow it in *rich* soil, to make it abundantly twiggy, and consequently flowery. Propagate by sowing the berries. The Mezereon, ordinarily pinky-lilac, has white-blossomed and also deep-crimson varieties. The Wood or Spurge Laurel, *D. Laureola*, is a hardy evergreen shrub, with green sweet-scented flowers. *D. Pontica* is similar in habit, but is tenderer. Several others, as *D. odora*, a greenhouse shrub, are multiplied by grafting on *D. Laureola*. An interesting novelty is Fortune's Daphne, *D. Fortunei*, found by that enterprising gentleman in the north of China. It has deciduous leaves, and little terminal tufts of purple-lilac flowers, which appear before the foliage. Grow it in a mixture of heath-mould and sandy loam, and try if it will not prove hardy in the unsheltered bed.

Deutzia gracilis, from Japan.—A favourite pot-plant, because it forces well, and is covered with an abundance of pure white flowers in small bunches. People who see it in that state in February scarcely suspect that it may be hardy out of doors. *D. scabra*, on a somewhat larger scale, is a little like a miniature Syringa, with white powerfully-scented blossoms. There are also *D. corymbosa* and *canescens*. Deutzias (which merit encouragement) strike readily from cuttings under a bell-glass; but if plants which have been forced in spring be turned out of their pots in early summer, and planted with their balls *rather deep* in the open ground, they will form several well-rooted suckers, which will make strong plants the following season.

Furze (*Double*)—*Ulex Europæus*—makes a handsome single bush in the midst a grass-plot, glittering in spring like a complete mass of golden flowers. Requires well-drained sandy soil; and, being of slow growth, is best purchased of nurserymen, who strike it from tiny cuttings under bell-glasses. Double flowers are not common amongst leguminous plants. *Severe* frost kills Furze,

either entirely, or more commonly down to the ground, reducing it to the condition of an herbaceous plant. Hence, its greater luxuriance near the sea. An old-established Double Furze well merits a little protection, when unusually hard weather threatens to destroy it.

Fuschia. — Flowering shrubs, from the central and southern regions of America, and from New Zealand, with pendent flowers, combining grace of form with the charm of rich colouring. The first arrivals, from the end of the eighteenth century, were shrubby, twiggy plants, with a certain degree of hardiness; such as *F. globosa, virgata, coccinea,* &c.; but in 1837 came *F. fulgens,* of quite a different character, with larger, tenderer leaves, longer blossoms produced in terminal clusters, and more delicate constitution. This was soon followed by *corymbiflora, cordifolia,* and *serratifolia,* from which, amongst themselves and with the older sorts, very numerous hybrids have been obtained, and are still being obtained anew every season. The list of beautiful varieties now on record must amount to several hundreds. *F. splendens* and its nearest relatives, with the offspring which have originated from them, are scarcely fitted for the open border, as their large leaves and fragile stems render them the victims of gusts of wind, besides requiring a more greenhouse-like climate than even that of our most genial summers. The twiggy Fuschias may be regarded as herbaceous plants in the inland counties of England: many of them stand the winter, and form strong stools: although the frost may cut them down to the root, they shoot and flower well the following summer. In the south, and by the sea, they will form permanent bushes or coverings for walls. They are better suited to make single, than bedding plants; their habit is so decidedly different, as to give them the look of "a very odd lot" when collected in varieties to make masses in the parterre. Any light rich mould suits them, with no stint of water, or the weakest possible liquid manure, during their period of growth. They strike readily from cuttings under a hand-light. They are good plants for the amateur to

amuse himself with, by hybridizing and raising new varieties; as the parts of fructification are easily come-at-able, they seed freely, and the result has not to be waited for long.

Guelder Rose—Snowball-tree—Viburnum Opulus—is remarkable for the globular heads, consisting entirely of the white sterile blossoms, which, in the wild state, grow around the fertile ones. In this phase, it is called the Double Guelder Rose, and produces none of the bright crimson berries which are so great an ornament to the original shrub, and are so welcome to birds in hard winters. Flourishes in a deep moist soil; is easily propagated by cuttings, layers, and suckers. *V. edule*, from South America, produces bright-red eatable fruit; how nice it is, the writer cannot say. *V. Tinus*, the Laurustinus, is a deservedly popular evergreen, flowering in winter; but bears slight frosts better than severe ones. In the south of France it attains the height of twenty feet and more. There are several varieties. Propagate by layers, but better buy of nurserymen. *V. odoratissimum* is a sweet-scented greenhouse shrub, which bears the winters of Cornwall and Brittany. *V. Lantana*, the Wayfaring Tree, with black berries and cottony heart-shaped leaves, is hardy; so is *V. Lentago* from North America. Other species are, *V. cotinifolium*, *prunifolium*, *pyrifolium*, *nudum*, *plicatum* (hardy, from China), *macrocephalum* (ditto, sent by Fortune,—has heads of white flowers at least as big as Hydrangeas), *cylindricum*, and *amethystinum*.

Heath—Erica.—A family, rather than a genus, of low, twiggy, tufted shrubs, with curious and beautiful flowers, many of which look as if they were moulded in wax or blown in glass, and are one of the choicest ornaments of our Grand Horticultural Exhibitions. It is a pity that by far the great majority, from the Cape, will not stand our winters. In pots, Heaths must have heath-mould of course; be kept never too wet nor too dry, in a house by themselves, exposed to no sudden changes or extremes of temperature, and have the gardener's

daily, almost hourly attention. Hence, fine exotic specimens are good testimonials to horticultural skill. All the British Heaths, of which there are six or seven, including varieties, deserve a place in the American bed. The prettiest are, *E. Tetralix*, with pink waxy flowers, fond of a moister situation than the others, and the Cornish Heath, red, with a white variety. *E. mediterranea* is hardy, as is *E. carnea*, very like the former, and producing abundance of pink and black blossoms in the depth of winter. Heaths are mostly struck from very small cuttings of the terminal shoots, in sand, under a bell-glass; but success is only attained by great care; and it takes some time to raise a plant of any respectable size. It is therefore better to purchase of nurserymen who make the culture of Heaths their business, a visit to whose garden is an instructive lesson, and whose lists comprise all that is new, as well as all that is old and of good repute. Waterer and Godfrey, of Woking, Surrey, amongst others, are famous for their Heaths; but the fate of most Heaths in pots, purchased as window-plants without forethought as to their ultimate destiny, is to perish shortly after their first campaign.

Hibiscus—See *Althæa*.—The Chinese Hibiscus, *H. Rosa Sinensis*, is a tall shrub with crimson hollyhock-like flowers, which are used in China *to black shoes with!* From it have been raised many beautiful single and double varieties, white, yellow, and divers shades of red. They all require a moist-atmosphered hothouse.

Holly—Ilex Aquifolium.—A handsome native evergreen, which has produced varieties of a great diversity of foliage,—marginated, mottled, and extra-prickly,—which are increased by grafting on the common sort. In old trees, the upper leaves on the top branches are destitute of prickles at the edges. By grafting, an entire plant of this kind may be raised. Hollies do best in a light loam, and though they will live in very poor soil, they show their appreciation of a good one by their more luxuriant and fuller growth. The common species is raised from its berries, which should be laid in a heap to rot during

winter. The growth of the seedlings is somewhat slow: these will furnish stocks for grafting and budding, as well as plants for forming hedges. A holly hedge is so effectual, durable, handsome, and hardy, that though it requires great patience to form, repays all the care that is bestowed on it. The young plants from a nursery (carefully lifted, without injuring their roots) should be planted in October, attentively watered and weeded for the first few years, and kept clear of everything that can overshadow or choke them. The Broad-leaved Holly, *I. latifolia*, a hardy evergreen from Japan, is propagated by grafting on the common Holly, as is also *I. opaca*, and several others. Admirers of the genus will find a tolerably long list of species, some of which must pass the winter in a greenhouse.

Honeysuckle — Lonicera. — Charming sweet-scented climbers and erect shrubs, which are almost all hardy with us. They have also the advantage of leafing early. They thrive in a sound, deep, light loam, with a half-shady exposure, and are consequently useful for covering walls and trellises that face the east or the west, even with a few points to the north. They are readily increased by seed from their berries, by cuttings, layers, and rooted suckers. The erect Loniceras will serve for hedges where great strength of fencing is not required. They are *L. Tartarica*, Tartarian H.; *L. Pyrenaica*, Pyrenean H., a pretty shrub, but more infested with aphides than the others; *L. Alpigena*, with pink flowers, and berries as big as little cherries; *L. Iberica*, resembling the former, but with pubescent leaves; *L. Xylosteum*, the Fly Honeysuckle; *L. brachypoda*, with twin odoriferous flowers, a greenhouse plant; and *L. Ledebourii*, from the Altaï, hardy, with orange flowers and black berries. Climbing species are *L. Caprifolium*, the Common Honeysuckle; *L. Etrusca*, a favourite with gardeners, as being almost a perpetual bloomer; *L. implexa*, from Majorca and Minorca, with slenderer stems and of humbler growth; *L. parviflora*, Little-flowered H., from Canada; *L. flava*, Yellow-flowered H., from N. America, delicate and rare;

L. sempervirens, Evergreen or Trumpet H.; *L. pilosa*, tender; *L. pubescens*, like the former; *L. Periclymenum*, the exquisitely-perfumed native of our woods; *L. confusa*, whose flowers change from white to yellow,—whence its Japanese name Nin-Too, or the Gold and Silver Flower; and *L. Sinensis*, another sweet-scented and very desirable species.

Hydrangea Hortensia—the Garden Hydrangea, from Japan—does best out-doors, in England, near the sea, where the winters are mild and the climate moist. In the Channel Islands, and in Normandy, there are Hydrangeas eight feet high, or more, with balls of flowers bigger than a man's head. Those balls are composed of sterile florets, exactly like the snowball on the Double Guelder Rose. The Hydrangea likes a light soil containing a large proportion of sand. The normal colour of the blooms is pink, after having been green in their immature state; but they change to blue when grown in certain soils, which can only be indicated with certainty after experiment; some peats, and also some loams, prove effectual to produce the chamæleon-like change, while others do not. It probably depends on the presence of iron, in some peculiar combination. The Hydrangea strikes freely from cuttings; the plants require *abundance* of water. In pots, the soil should be annually renewed. In the open garden, a sheaf of loose straw scattered loosely over a bush will make a good protection, as it admits air at the same time that it keeps off hoar-frost and ice from the tips of the shoots. Other species are, *H. arborescens, nivea, quercifolia, Japonica, involucrata;* the last very pretty, requiring the same treatment as *Hortensia*, as also does *H. pubescens*, with large handsome leaves, whose petioles and veins are brilliant red.

Jessamine— Jasminum officinale — is the favourite white-flowered, sweet-scented climber, so useful for covering arbours and verandahs; may be also trained to make a handsome standard in a pot. Propagate by cuttings and layers. *J. Sambac*, celebrated for the fragrance it exhales *at night*, must be grown in a hothouse. *J.*

revolutum, the Yellow Jessamine, has bright golden flowers, and does best trained against a wall. The Winter Jessamine, *J. nudiflorum*, is another of the lovely things we owe to Mr. Fortune. Its multitudinous clear yellow blossoms appear before the leaves, in January or February, and it is hardy enough to be left out-doors against a wall, and may even prove that it has still greater powers of endurance. In pots, it makes a most elegant parlour shrub, with the additional recommendation that it is scentless, or nearly so. It may be questioned whether there are any truly scentless flowers: it is certain that there are paradoxical flowers, which really exhale a powerful odour, that in some cases is extremely offensive to the human system, in others harmless, although the odour itself, as a smell, is imperceptible to ordinary nasal nerves. A correspondent of the *Gardener's Chronicle* (Jan. 8th) writes thus:—"This beautiful Jasmine is certainly a great acquisition to the flower-garden, inasmuch as it produces its cheerful bright-yellow flowers during autumn and winter, and continues blooming for several months in succession. It is also very useful for cutting for bouquets, and the sprigs will last in water a long time. It may be grown in any common light soil; and no one fond of a garden ought to be without it, for it does not take up much room. It is best planted against a wall, and kept trained. It is a free-growing plant, when it gets established, and quite hardy. We have a specimen which has been planted about five years. It is against a south wall about ten feet high, and is covered with charming yellow flowers from bottom to top. It has been in this condition from the beginning of November, and appears likely to continue so for a long time to come. When grown in this way, it is truly a splendid object. The way we have treated it is as follows:—It was planted out in the spring, and kept trained against the wall during summer, giving it a good supply of water at the roots. It made a good growth, and bloomed the same year. After flowering, it was pruned, cutting the side-shoots to one or

two eyes, and keeping the leading shoots trained up the wall till they attained the height that was wanted. It has been pruned every year since. Of course, it should not be cut in summer, for it blossoms on the young wood, and the longer the shoots the more bloom you get. It is easily increased by cuttings or layers. In the former case, take part-ripened wood and place it in a pot in light soil and sand mixed together; afterwards, put them in a warm frame till they are rooted, and then pot them afresh in small pots. Set them in the frame again, till they are rooted; then move them to a cooler place till spring, when they may be turned out against a wall, and treated as recommended above." In short, the Winter Jessamine only requires to be better known to become a popular favourite; and the purchase-money of this Book will be well laid out, if it only induces the purchaser subsequently to buy a plant or two of *Jasminum nudiflorum*. Other species deserving of notice are *J. odoratissimum*, yellow flowers, greenhouse culture; *J. chrysanthum*, hardy, evergreen, yellow, scentless; and *J. grandiflorum*, white, in greenhouse, sweet-scented; may be cleft-grafted on *J. officinale*.

Kalmia. — American shrubs, with very curious and elegant flowers, requiring the same treatment as Azaleas. The honey, of some species at least, is said to be poisonous.

Laburnum.—See *Cytisus*. *Purple Laburnum*.—See *Wistaria*.

Laurustinus.—See *Viburnum*.

Lavender—Lavandula spica (whose flowers are in request by distillers, perfumers, and housekeepers who are careful over their linen)—is propagated by cuttings, in spring, struck under a hand-glass. See "The Kitchen Garden." *L. Stœchas* is tenderer, and not worth having trouble bestowed upon it; as are likewise Lavenders *latifolia* and *pinnatifida*. They grow wild on the shores of the Mediterranean.

Lemon and Orange Trees—Citrus—grow out-doors against a wall in a few favoured spots in Cornwall and

Devonshire. Large Orange-trees, in cubical boxes, sometimes as much as three or four hundred years old, wintered in an orangery, and placed in conspicuous positions in the pleasure-ground during summer, form a striking feature in Continental gardening. They belong exclusively to the grand style of the Art, and demand considerable labour for their removal to and fro, and constant care in pruning and attendance. Those who have seen the Orange-trees in the gardens of the Tuileries and the Luxembourg at Paris will not easily forget their effect. The best French gardening-books should be consulted by those who desire to learn full details of their treatment.

Lilac—Syringa vulgaris.—The common species has a pure white variety of less robust habit and growth. The French have raised and cultivate several others, one of which has leaves mottled with white and yellow. *S. Persica*, the Persian Lilac, is a smaller and slenderer shrub, with looser, more drooping heads of flowers, more aromatically perfumed. This also has a white variety; and another, *S. Sangéana*, is highly esteemed. The Persian Lilac forces well, both as pot-plants and to furnish cut flowers for bouquets. Less known Lilacs are *S. dubia*, a native of China; *S. Josikæ*, discovered in Hungary, in 1828, by the Countess Rosalie Josika. *S. Emodi*, a new Himalayan species, resembles the Persian Lilac, but with more numerous flowers. The Lilacs produce plenty of suckers, and are propagated still more rapidly by layers: the rarer kinds are grafted on the common.

Mezereon.—See *Daphne.*

Myrtle—Myrtus communis (of which there are broad-leaved, narrow-leaved, variegated, and double-blossomed varieties)—in point of hardiness is much on an equality with the Camellia, resisting the winters in many parts of Cornwall, Devonshire, and Ireland, with this difference, that, flowering later, it blooms safely and abundantly in the open air. In most parts of England, Myrtles must be kept in the greenhouse during winter. The single flowers produce berries, from which seedlings may be

raised; but the usual mode is to strike cuttings in sandy soil under a bell-glass. Allspice, *M. Pimenta*, is now removed to another genus. *M. microphylla* has pretty foliage, which pleases by its great regularity.

Nerium splendens—Oleander,—a handsome evergreen, with full, rose-pink, single or double flowers: there are flesh-coloured and other varieties. It is even tenderer than the Myrtle, and therefore useless here as an out-door shrub. Its merits hardly entitle it to the space it would occupy in the greenhouse, and its great tendency to bleed profusely renders pruning an unsatisfactory operation to keep it in shape. Many a gardener has looked upon the death of an awkward overgrown Nerium as a happy release, and has forthwith consoled himself for the bereavement by taking into favour some less ungainly beauty. It requires abundance of water, and is propagated either by rooted suckers, or by *slips* pulled off, not *cuttings*, rooted in a bottle of water, or in light soil kept constantly wet. It is abundant in Algeria, along the banks of streams, which it is said to poison, either by exudations from its root or the drip of its leaves.

Oleander.—See *Nerium*.

Passion Flower—Passiflora cærulea, the Blue or Common Passion-flower—is the representative of a large genus, which are stove or greenhouse climbers, with the exception of two,—this and *P. edulis*,—which may be left in the open ground during our ordinary winters, with protection, and a covering of litter at root. Their name is derived from a fanciful resemblance which the various parts of inflorescence bear to the symbols and instruments of the Saviour's Passion,—to the glory, the hammer, the nails, the wounds, &c. Passion-flowers rapidly exhaust the soil in which they grow, require plenty of root-room, and consequently are not well adapted for pot-culture; they thrive in light, rich, deep loam, well drained, and yet not too dry. They are propagated by cuttings, layers, suckers, seeds, and by grafting on *P. cærulea*. It is always safer to retain in pots small plants

of the out-door kinds, in case of accident to their elders from severe frost. Some of the half-hardy kinds are worth turning out against a wall the first week in June, a succession for another year being kept up in the same way as with bedding-plants. Several species bear edible fruits, called grenadillas, which, if not of high flavour, afford welcome refreshment in hot climates; here (as those on *P. edulis*) they are simply pretty and curious, hanging along the branches like a series of eggs of increasing dimensions. *P. quadrangularis* bears, at home, fruits as big as Melons, whose pulp is eaten with sugar; in our hothouses, it flowers and gives out its perfume better than it fruits. *P. Brasiliana* produces flowers often at the extremity of its tendrils. *P. maliformis* has yellow fruit as big as apples; while that of *P. laurifolia*, the size of an egg, is in high esteem. *P. palmata*, with violet flowers, *blooms* well in the open air, although it may not prove perennial there. *P. Neumani* likewise may be made the subject of out-door experiment. *P. incarnata* has deep-blue flowers, and its crown, or rays, are longer than the corolla. If its shoots are frozen in the open ground, it will send forth others, which will flower in the August of the same summer. *P. Loudonii* is a stove-plant, with brilliant crimson flowers, deservedly named in compliment to one of our most industrious and able horticultural writers.

Polygala speciosa, oppositifolia, myrtifolia, lanceolata, Heisteria, &c. — Cape shrubs, with butterfly-shaped flowers of various shades of purple, and with a silky tassel at the tip of the keel. Their foliage is neat and regular; they require a mixture of leaf-mould and sandy loam. They will not bear our winters out-doors, which is a great pity; because, in pots, they have a great tendency to become wire-drawn and bare at foot, while the elegance of the flowers renders them desirable to retain either for bouquets or to remain blooming on the plants themselves. Purchase of a nurseryman, rather than be plagued with the slow process of raising tiny cuttings taken from the tips of the shoots, or seeds sown

on a hotbed, or layers. Be careful to water neither too little nor too much: it is far better to give the required moderate, but constant supply, at two or three doings than at one.

Pomegranate—Granatum, flore pleno.—The Double-flowered Pomegranate will thrive out-doors, in England, against a wall. It is a favourite plant to be thus trained, as a sort of pilaster, on each side of the entrance-door of a mansion. But the blooms thereon are few and rare, partly perhaps from injudicious pruning: the flowers are produced on the shoots of the year, and therefore care should be taken to leave lateral spurs from which they may start. But the truth is, that, even in France, the Pomegranate is a *tub-plant*, requiring a considerable *length* as well as heat of summer, which is attained by forwarding it in an orangery in spring. So treated, and brought out of doors, with us, about midsummer, it becomes, in the course of years, a magnificent object, adorning the close of summer with its bright-scarlet fleshy flowers. The Pomegranate attains a great age; perhaps equal to that of the Orange-tree and the Olive. Its bark, then, is twisted like a corkscrew, and its aspect venerable, at the same time that it annually blooms and puts forth its small, shining, deciduous leaves. There are yellow and white varieties (both far from common), which may be grafted on the Single Pomegranate. Cuttings strike freely, *in heat*. *P. nana* is a dwarf species, or variety, which comes to us from South America. An intermediate variety, *P. nana racemosa*, double, flowers more freely, and earlier. The Pomegranate does best in a substantial loam, that is at the same time rich and pervious to moisture, and is renewed at no long intervals. During growth, it must have frequent and copious waterings. The bark of the roots, and the roots themselves, are in repute as a medicine against intestinal worms.

Pyrus Japonica—Japan Pear,—which bears scarlet blossoms early in spring, is really a Quince, and is now removed to the genus *Cydonia;* but many real Pears deserve culture as flowering-shrubs and trees. Of some, the

fruit is pretty, and good to eat, as in *P. baccata, prunifolia,* and especially *P. Astracanica. P. salicifolia, Sinaica* (from Mount Sinai), and *salvifolia*—allied species, with woolly, light, and downy elongated leaves—have a pleasing effect. *P. spectabilis, coronaria,* and *floribunda,* are exceedingly showy. Propagate by seeds, or by grafting on the Service, the Hawthorn, the Crab, the Wild Pear, or the Quince. The Service-trees and the Mountain Ashes have been removed from the Pears to the genus *Sorbus.* The common Mountain Ash, *S. aucuparia, i. e.* Bird-catching Service (of which there is a weeping variety), is admired for its coral-red berries, as well as for its handsome foliage. The American Mountain Ash, *S. Americana,* is robust and erect, with smaller and darker red fruit than the former. Those who have not the patience to raise them from seed, may graft on the White Thorn. If you sow the berries of the Mountain Ash in the chinks of rocks, years afterwards, when you have forgotten the circumstance, you will find an ornamental object growing on the spot. Some of the Services, again, are referred to the Hawthorns, to which they are very nearly allied. The planters of shrubberies will do well to inspect a complete list of the genus Pyrus.

Raspberry (*Flowering*).—See *Bramble.*

Rhododendron — The Greek for Rose-tree.— Native evergreens of Europe, Asia, and America, whose best-known representative is perhaps *R. Ponticum,* from Asia Minor, and its very numerous varieties. Of late years, the genus has been greatly enlarged by the discoveries of Dr. Hooker in the Sikkim Himalaya mountains, whence he has introduced plants of extraordinary beauty, and from which every year exquisite varieties and hybrids are likely to result. Of these original species, *R. Thompsonii* is one of the handsomest shrubs ever introduced into Europe. In damp and shady situations, it attains a height of six feet or more. Its leaves are broad in proportion to their length, light-green above, and somewhat glaucous beneath. Its large whole-

coloured, bell-shaped flowers grow together in bunches of six or eight, and glow with the most vivid crimson. All the Rhododendrons are American plants, in the gardening sense; they have fibrous roots, which are seriously injured or killed by drought, and they must have some sort, or imitation, of heath-mould. Where this is not to be had from a natural source, within a convenient distance, a substitute may be manufactured by thoroughly combining silver-sand with leaf-mould, rotten sawdust, rotten tan, little bits of stick, and the refuse of a wood-stack charred in an oven to kill the insects, light loam, and vegetable refuse in which the seeds and creeping roots of weeds have been deprived of their troublesome vitality. Rhododendrons must have a certain amount of shade; and therefore, when not under lofty trees (which is their natural position), they do best with a north or north-east exposure. It is curious that several of the Sikkim species,—for instance, *pendulum* and *Dalhousiæ*, are epiphytes; that is, they grow on the branches of trees, where their roots find support and nourishment by penetrating the moss and loose bark. Nevertheless, they grow well in pots, and in the open ground, in heath-mould, with good drainage at bottom, and a moist atmosphere above. As the hardiness of these novelties is scarcely yet ascertained with accuracy, it will be safer to house valuable specimens in a greenhouse in winter; still there is every reason to hope that they will be found to adapt themselves to the British climate, if proper attention be paid to their peculiar requirements of shade, a peaty soil, and a constant infiltration of moisture. At least they are well worth the risk of experiment. Thus, *R. glaucum*, light purple, grows in the clefts of rocks at an altitude of four thousand feet; *R. lanatum* has large leaves and light-yellow flowers with a bright orange spot and purple speckles within; *R. triflorum* has pale-yellow flowers, growing by threes at the tips of the young shoots; *R. Maddeni* has large white blossoms delicately washed with pink outside; *R. argenteum* is so named because its leaves, dark green above, are silver-

white beneath. The undeveloped flower-buds are protected by membranous scales of a bright pink; the pure white flowers form enormous bunches. These few are sufficient to give an idea of the obligations which gardeners owe to Dr. Hooker. Other and older species are *R. arboreum, cinnamomeum, roseum, maximum* (greatest, rather a misnomer), and *Catawbiense*, with their very numerous offspring obtained from seed, and only to be propagated by extension. *R. Vervæneanum*, a fine variety raised by Monsieur Vervæne, has double flowers, light rosy-lilac speckled with yellow. The centre of each bloom is filled with tufts of stamens transformed into petals. *R. ferrugineum* and *hirsutum* claim our interest as natives of the Alps. *R. Chamæcistus*, from the mountains of the Tyrol, has bright flesh-coloured flowers, is the smallest of the genus, and far from the easiest to cultivate. All are naturally of hardy constitution, and accustomed to severity of weather at home; but they will not stand *all kinds* of winters. These nice peculiarities of atmospheric condition are what constitute the main difficulty in the culture of Alpine plants. At the first glance, it would be taken for granted that plants growing not far from the line of perpetual snow, must be easy to keep alive sheltered on the plain, where they are secure from snowdrifts and gusty winds; but in practice, such is not found to be the case. Rhododendrons are propagated by grafting and layering. The nicest plants are obtained from seed sown in pans of sifted heath-mould, pressed down with the hand, and kept equally and constantly moist till the seedlings have sprouted, which is effected by making the pans stand in other pans filled with water, and covered with a bell-glass or even a flat pane. In their second year, the plants are pricked out; two years afterwards, they are shifted to wider distances, where they remain till strong enough to take their final positions. The Rhododendrons are very nearly allied to the Azaleas, and even hybridize with them. They bear transplantation well, if removed with a good ball of earth and well watered afterwards.

Ribes.—The Latin generic name of the common Currant and Gooseberry bush is now popularly used by gardeners to indicate the species with showy flowers and worthless fruit, mostly from California. *R. sanguineum* is widely spread, as is its variety with double flowers. It likes shade and a moist peaty soil. The Flowering Gooseberry, *R. aureum*, has golden-yellow flowers with bright red anthers. *R. palmatum* has longer flowers than the above. Between this and *R. sanguineum*, a hybrid, *R. Gordonianum*, with sterile nankin-coloured flowers, is supposed to have been originated. *R. malvaceum*, Mallow-leaved, and *R. speciosum* or *fuschioïdes*, Fuschia-flowered, and *R. cereum*, Wax-leaved, *floridum*, *multiflorum*, and *punctatum*, are all equally hardy with the above. The ornamental Ribes do not bear indiscreet pruning, especially at bottom: they do much better grown as bushes than as standards, and require to have their wood thinned out rather than shortened. They are increased without difficulty by suckers, layers, and cuttings; more slowly and more uncertainly by seeds. The Flowering Gooseberry likes a drier and more gravelly soil than *R. sanguineum*. When grown in pots and greenhouses, the flowers lose much of their fulness of colour, which requires the open air to reach its attainable depth and richness.

Rose—Rosa.—Multitudinous in species, endless in variety. For any one in search of a floricultural fancy or hobby-horse, perhaps no better *protégé* can be recommended than the genus Rose to take into favour. For, independent of all historical and poetical associations, and forgetting its sweet inoffensive perfume and its medicinal virtues, the Rose affords a subject for rivalry and exhibition, with great diversity of form, colour, habit, and constitution. Although it is easy for those who have few horticultural appliances, to form a fine collection of hardy kinds, others, whose means put them in possession of frames, hothouses, and greenhouses, may extend their lists by tender sorts, equally charming and more rare,—may anticipate the summer's bloom, by forcing; may

rescue autumnal buds, by shelter, from perishing, and may enjoy the luxury of roses all the year round; not, as with Ranunculuses so treated, by a constant repetition of the same thing over and over again, but by bringing forward, in their natural order, a diversity of plants which have a tendency to bloom at different seasons. The sight of a well-kept Rosary in spring, summer, autumn, and winter, will convince you that the above remarks are founded on truth. Supposing that you consult the *Gardener's Chronicle*, and that you run your eye through the advertisements there, you will have met with several pressing invitations to visit, during their season, sundry fine collections of roses, all unrivalled;—none but themselves can be their parallel;—all in full bloom, and likely to continue so, till November comes to draggle their petals and scatter their leaves. Reversing the celebrated advice to persons about to marry—"Don't!"—I will take the liberty, when a Rose-hunt is talked of, of urgently insisting—"Do, do!" And do it fairly, without favour or partiality; go and see *all* the rose-gardens, or as many of them as you can possibly visit. Live on bread and water for a week, and work double tides, rather than fail to pay your court to the Queen of the Bourbons, and The Queen, surrounded by their ladies of honour. It is worth while putting oneself a little out of one's way to inhale the perfumed breath and to gaze upon the blushing though highly-rouged cheeks of Madame Laffay, Madame Desprez, Lady Alice Peel, and the Duchess of Sutherland, and to be interested by the tenderer, paler complexions of the Duchess of Orleans and Mrs. Bosanquet. The Souvenir of Malmaison will make you sigh with an emotion in which pleasure predominates over painful recollections. Then, there are little round-faced pupils, to whom you might wish for an introduction, but who are still in their nursery—they have not yet come out. Some of these, if you treat them well, will supply you with bouquets nearly all the year round. But, leaving their budding innocence in retirement for the present, start as soon as you can in search

of a perfect rose, hoping one of these days to meet with, as we are promised, a Yellow Moss Perpetual; and give no just cause to Paul and Son, Wood and Son, or Lane and Son, or Mitchell, or Clark, or Grier, or Bircham of Hedenham, or others, for whose names there is no room in a brief prose rose-epic, to regard each other with sour and jealous looks, because you have favoured some with your presence and have slighted their competitors. Make a complete rhodological tour, as far as lies within your power.

You will find groups or classes of roses, with very distinctive characters, which may be divided into Late-Spring and Summer Roses, and Autumnal and Winter Roses. Of the first, we have the *Provence* or *Cabbage Rose*, which is no other than the *R. centifolia*, or Hundred-leaved Rose, from the number of its *petals*, not its leaves. Of this there are several varieties in point of *colour*. The *Queen of Provence* is paler and more lilacky than the common sort; the *Scarlet Provence* is merely a carmine-tinted flower. The *Unique* is a white Rose of extreme purity, probably proceeding from the Cabbage Rose by what is called "sporting," *i.e.* when a sucker or a branch of the original plant changes its character without assignable cause. These "sports" are only perpetuated by budding, grafting, or layering, and even then are far from permanent, showing a constant tendency to revert to the original type. Thus, on the same branch of the Unique you will sometimes have a completely red flower by the side of a white one. The *Striped Unique* has the petals exquisitely striped with pink, like those of a delicate tulip. This, too, is not to be depended upon for stability of character. Sometimes a bloom will come half white and half striped, sometimes half red and half striped, and occasionally half white and half red, without any stripes at all; and that perhaps on the very same bush. The *Crested Provence*, sometimes erroneously called the *Crested Moss*, is very beautiful before it is fully expanded. It is in all respects like the Cabbage Rose, except that on the outer divisions of the calyx there grows, not moss, but a kind of stiff irregu-

lar fringe, very artificial yet tasty in its appearance. It looks as if some short, stiff, bright green seaweed had taken root outside the bud. Of course this supplemental ornament is lost to sight when the Rose is fully expanded. The above extremely pleasing varieties warn us how careful we ought to be in rejecting plants growing in old gardens, before we have seen with our own eyes what they actually are. The Crested is said to have been discovered growing from the crevice of a wall in Friburg, Switzerland; and the Unique was found by Mr. Grimwood, then of the Kensington Nursery, in the garden of Mr. Richmond, a baker, living near Needham Market, Suffolk. Mr. Grimwood asked for a branch, but obtained the entire plant, which was willingly given him. It ought to be added, that the following year Mr. Grimwood, to his credit, made Mr. Richmond a present of a handsome silver cup, on which was engraved a figure of the rose. Two exquisite and delicate varieties, the *Bath White Moss* and the *Pompon Moss*, owe their discovery and preservation to persons who knew how to make use of their eyes, and had profitably studied "The Art of Seeing." There can be little doubt that many beautiful unknown flowers are trampled under-foot and destroyed, without an opportunity of displaying their merits, simply because some careless landlord, gardener, or in-coming tenant, happened first to behold them when they were not in bloom, or in leaf.

The Cabbage Rose has produced dwarf varieties; how, or where, we do not know. The *Rose de Meaux* and its still more diminutive sister the *Pompon* (Little Trinket) Rose, are miniatures of the Cabbage Provence, with the advantage that they bloom earlier, and so make elegant pot-plants for forcing. *Spong's Rose* is intermediate in size and stature between the Rose de Meaux and the Cabbage, but most resembles the former; it is cupped, with a full pink centre, the outer petals being lighter, and makes a beautiful little standard, budded low. The *Dwarf Burgundy* is another member of the same family, with cupped, deep-red double flowers, but a much less

abundant bloomer than either of the above. The *White Burgundy*, similar except in colour, is less frequently met with. All these Dwarf Roses must have a free rich loam; they have a great tendency to send up young wood annually from the roots, which young wood, principally, but not exclusively, bears the blooms of the following season, while the old wood becomes barren, sticky, and half-dead. Hence it is better to cut out the wood which has once flowered, without waiting for its natural decline, and also to remove the plants every second year, pruning them at the same time on this principle. To be sure, the treatment is a little troublesome; but it is the only way to prevent Pompons and Burgundies from getting rough and shabby. For the same reason, standards of these Lilliputian Roses, though very pretty, are apt to be equally short-lived: they bloom well *once*, and then they go dead, unless they can be made to throw out vigorous young wood from the point where the original bud was inserted.

Of the *Moss Rose* we are ignorant whence it comes; we only know that it is nearly related to the Cabbage Provence, and that everybody admires it. The *Bath White Moss* greatly resembles it, with the exception of colour and a much more delicate habit. It is largely grown for the American market, where it is highly admired; but where it is probably even more short-lived than with us, for we can only keep it going by continually budding it afresh. *Moss Unique* is said to have been obtained from a *Unique* branch producing flowers adorned with moss. The branch was budded from, and the plants so propagated produced flowers retaining (with more or less certainty) their mossy characteristic. The *Blush Moss* is a beautiful rose, somewhat less fragile in constitution than the White Bath. The *Crimson Moss* is handsome and vigorous; sometimes called the *Tinwell Moss*, from having been raised at Tinwell, in Rutlandshire. The *Moss Pompon* is a charming little pet, which requires every care to keep it in tolerable vigour. *Zoë*, or Mossy Partout, is so called because the leaves even, and the

stalks and stems, are productive of the mossy excrescence. *De La Flèche* is the nearest approach to a *Scarlet Moss*. There are other Moss Roses of the same type, but these are among the best.

Another set of Moss Roses have more semi-double flowers, a more rampant growth, a tendency to flower twice during the summer, and to produce their bloom in numerous clusters. They are likewise well covered with moss, and are more beautiful in the bud than when full-blown. They have hardly a right to the title "Perpetual," although the *Perpetual White Moss* and the *Perpétuelle Mauget* (bright rose and handsome, raised from the *Crimson Perpetual*) figure on the lists. Good mosses of the same character as these, without any pretensions to perpetuity, are *The Luxembourg*, deep crimson, of vigorous growth; *Cælina* or *Selina*, like the preceding, but darker in tint; and *Comtesse de Noé*, bright crimson and purple, of good form and vigorous growth, with handsome dark-green foliage. The moss roses are budded as easily as others; only the spines and moss on the bark in the immediate neighbourhood of the bud, must be rubbed off by gentle *side* strokes, while the cutting from which they are taken is still fresh, and just before the operation is performed. They require a well-drained, deep, rich loam, which, at the same time, is never subject to drought and scalding, with plenty of sun and air. Under such conditions, the robuster varieties will luxuriate vigorously. Mr. Paul describes a pillar of the old Red Moss attaining a height of fifteen feet, and although not well furnished with branches the whole height, some of the shoots of the previous year's growth were above six feet long, and the main stems had swelled to a considerable size. It is true that such gigantic stature is above the average, and is owing to the combined effects of soil, situation, age, and the fostering care of the cultivator; still, quite within the attainment of ordinary gardeners is a collection of Moss Roses, formed into pillars varying in height from six to eight feet. The above-mentioned kinds afford sufficient materials for accomplishing the purpose.

The *Double Yellow Cabbage Rose*, or *Yellow Provence* —*R. sulphurea*—approaches the Provence in name only, and in similarity of form of the expanded blossom, being essentially alien in descent to that and most other roses. When well bloomed it is a horticultural gem, but is so difficult to manage as to make it, in that case, a horticultural triumph. As to situation, I have never seen it blossom well, either in Britain or on the Continent, except when growing at the foot of a low wall, over the top of which it could straggle as it pleased; for it will not submit to pruning. It is one of the roses (among which are included the pretty little climbing *Banksias*, with their white or nankin-coloured tufts of tiny violet-scented flowers) which cannot bear even the smell of cold steel. You might not unreasonably expect them to refuse to flower if you come near them with a knife in your pocket, even if you do not take it out and open it. You may get rid of their dead and used-up wood as well as you can, by breaking it off; but the effluvium of iron agrees not with their constitution. A *south* aspect does not suit the Cabbage Yellow, while plenty of evidence exists to prove that the best chances are had in the above-stated position, or some near approach to it. Mr. Paul tells us:—"At East Lodge, on Enfield Chase, there was a plant on its own roots, growing at a distance of about ten yards from a wall with a north-eastern aspect. It here produced its beautiful yellow blossoms abundantly, covering the bush on all sides, during the flowering season, for several successive years. This situation is high and exposed: the soil is naturally a heavy loam, but was somewhat lightened and enriched by the frequent addition of stable manure At Ballater, in Scotland, both this and the *Austrian Rose* flower beautifully. They grow there most luxuriantly, in a very exposed situation, covering a wall of great height and extent, laden with perfect flowers." Mr. Rivers tells us:—"At Burleigh, the seat of the Marquis of Exeter, the effect of situation on this rose is forcibly shown. A very old plant is growing against the southern wall of the mansion, in a confined situation, its root cramped by a stone pavement; it is weakly, and never shows a

flower-bud. In the entrance-court is another plant, growing in front of a low parapet-wall, in a good loamy soil and free airy exposure; this is in a state of the greatest luxuriance, and blooms in fine perfection nearly every season. M. Godefroy, a French nurseryman, has cultivated the Yellow Provence as a pillar rose in a free and open situation with much success. Surface manure in autumn, liquid manure in May, and summer pruning with finger and thumb, are indispensable details in his routine." The Yellow Cabbage will not bear the smoke of towns; nor has any good been done with it by budding, as far as has yet come to light. In unfavourable soils, it has been recommended to be budded on the *Musk Rose*, the *Common China Rose*, or on some free-growing *Hybrid China;* or to bud and graft it on short stems of the *Rosa Manettii*, to be afterwards planted in orchard-houses; on all which, the only true commentary is comprised in the words "but" and "perhaps." Possibly we have no congenial stocks on which to bud it, but must ransack the wilds of its native Persia to find them. Its delicate glaucous leaves and slender prickly twigs do not look as if they could find sympathetic support from any of the roses at present dwelling in Europe. In short, no system of culture has hitherto been hit upon which is certain to insure a successful issue. It is not quite clear that its dwarf variety, the *Pompon Yellow*, has ever opened its flowers in England.

The Austrian Briar—R. lutea—takes after the Yellow Cabbage in its dislike to smoke, to pruning with a knife, and to being budded on other stocks. It likes a dry soil, and plenty of liberty for its branches to ramble. As yet, a double Austrian briar is a desideratum, which, enthusiasts tell us only bides its time. There are two varieties; the most striking has large single blossoms, rich copper-colour within and yellow without; the petals of the other are of a bright canary-yellow, both on their upper and under surfaces. *Harrison's Double Yellow Briar* is a valuable Rose, bearing town-smoke a *little* better than the former, doing well budded on the Dog

Rose, and blooming both freely and early. It is useful to constitute *the* attractive flower in the centre of a pretty bouquet. In pruning, thin out the twigs rather than shorten them: you will thus obtain a sort of weeping Rose. *Harrisonii*, as it is sometimes called, reached the Old World from America. *The Persian Yellow* is also a beautiful semi-double briar, which was highly vaunted on its first introduction. It is questionable, however, whether it will supersede Harrison's. It has scarcely bloomed so freely, nor submitted to the restraints of pruning and the proximity of towns with so good a grace; but still deserves a fair trial and persevering attention on the part of the amateur. Persia has yet other Roses to send us, if some enterprising collector will only fetch them. The large species there called the Nustarund, which grows to a considerable height, throwing out garlands of highly-scented flowers, would be a valuable acquisition to our pleasure-grounds; the Miskeeja is also a very pretty delicate cream-coloured Rose. From a red kind, highly scented, the best rose-water is distilled.

The *White Rose—R. alba*—is the parent of a very distinct little party, recognisable by their grey glaucous leaves, their vigorous shoots, with smooth bark and stout thorns not too closely crowded, and their peculiar perfume. They often make handsome plants in moderate-sized towns, grown on their own roots and trained against a wall, a large surface of which they will cover. The *Old White* is an early and a welcome rose; its semi-double and single varieties are often to be seen in out-of-the-way gardens and shrubberies, as if the plant had stolen away to the wilderness, and had resumed the habits of savage life. Everybody knows and loves the *Maiden's Blush*. *Celestial* is a very beautiful flower when half-opened; afterwards, its charms diminish. Madame Audot is a fine double creamy pink hybrid between the Alba and something else. *Princesse Lamballe* is a lovely pure white rose, sometimes delicately tinged with flesh. *The Queen of Denmark* is another

charming hybrid; *La Séduisante* is a fine flower. Hybrids from the White have produced several mottled roses; amongst which are *Madame Campan*, *Effie Deans*, and *Marie de Bourgogne*. The Old White and the Maiden's Blush furnish excellent stocks to bud on.

The French Rose—R. Gallica—a highly-scented species, of robust growth and thrifty habit, in any tolerable soil; is largely grown in the environs of Provins, in France, to make conserve; it is thence sometimes called the *Rose de Provins*, which has caused a confusion with Provence roses. A well-known type is the medical rose, grown for the apothecaries to dry and make decoction of roses with, and for the preparation of rose-water by distillers. Another wide-spread variety is the coarse, semi-double, striped rose, which ought to be called *Rosamond*, or *Rosa mundi*, the *World's Rose*, though it is often wrongly styled the *York and Lancaster*. French roses will often succeed in towns. From them have been raised several beautiful striped and spotted varieties; as the *Village Maid*, *Carnation*, *Abbesse*, *Duc d'Orléans Ponctuée*, *Harlequin*, and others. The spots are less to be depended on than the stripes. Many of the French roses are admirable as exhibition flowers; take as instances, *Enchantress*, light pink; *D'Aguesseau*, bright crimson, very large and full; *Boula de Nanteuil*, dark crimson; *Kean*, crimson-scarlet shading into purple; *Grandissima*, rosy crimson; *Briseis*, brilliant rose; *Comte Lacépède*, rosy lilac; *Guerin's Gift*, vivid rose; *Madame Dubarry*, crimson-scarlet; *Œillet Flamand*, distinctly striped with pink and rosy lilac; *Pamela*, large, rose, and very double; *Tricolor*, striped crimson and purple, of which there are several successive improvements; *Tuscany*, dark velvety-crimson; and scores of others. The petals of the French roses are the best for making *pot-pourri*. In pruning, thin out the heads well, and shorten the shoots moderately. The nurserymen's catalogues of French roses are immense; but, as Mr. Rivers observes, "it is perfectly useless, in the present advanced state of rose-culture, to burden these

pages with a long list of varieties which are, or ought to be, obsolete. Autumnal roses must very shortly entirely supersede all the summer roses, with the exception of a few select varieties of the Moss Rose;" and, let me add, the Yellows, the Whites, and the Scotch.

Damask Roses—R. Damascena—are of rough, twiggy, thorny habit, with light green, somewhat downy leaves, and hardy constitution. A good example is the true *York and Lancaster*, a double, flattish, striped rose, which occasionally produces blooms wholly white on one half of their area, and wholly red on the other, thus symbolizing the union of the Houses after the bloody wars of the White and Red Roses. They are fragrant flowers, but the bushes on their own roots are of irregular, scrubby, and inelegant growth. Budded as standards, they may be treated in the same way as the French Roses. Show Damasks which deserve mention, are *Madame Hardy*, pure white, but with a green eye too conspicuous; *Semiramis*, fawn in the centre, shaded with glossy pink; *La Féroce*, or *Ferox*, very large, full, pink flowers, with an extra allowance of thorns on the branches; *La Constance*, or *Pæony-flowered*, very large, flattish, full, pink, darker in the centre, makes a showy standard; *La Ville de Bruxelles*, pink, very large and double; *La Chérie*, delicate blush, cupped, very double; *Madame Zoutman*, delicate cream-colour; and *Pulcherie*, pure white. Do not prune these in too closely; let them run on, to form large heads, unless they are getting shabby and naked near the original bud.

Scotch Roses—*R. spinosissima*—have small leaflets, small twiggy branches thickly set with small spines, producing undersized, globular, double, aud semi-double flowers, sweetly scented, and blooming before summer roses in general. They have a great tendency to throw up suckers, which blossom profusely the following summer; hence, some growers cut out the old wood annually, almost as strictly and completely as they would do with raspberry-canes. All the Scotch roses resemble each other very much in their habit of growth; they are less

easy than other members of the same genus to distinguish, when leafless in winter, by the aspect of the wood. A collection of the different varieties makes, therefore, a nice even hedge of roses, which only requires looking over once or twice a year to keep it compact and in order. Budded as standards, they make pleasing heads when full in bloom, but require considerable patience to prune, which must be done by thinning out rather than by cutting back. The blooms are better adapted for out-door enjoyment, and for bouquets, than for exhibition. A few distinct varieties are *The Queen of May*, blush; *True Yellow*, a hybrid, sulphur-coloured fading to white; *The King of Scotland*, petals purplish red within, light without; *Venus*, dark and double; *William IV.*, large white; *Sulphurea*, straw-coloured; *Guy Mannering*, double blush; *La Neige*, white and double; and *Daphne*, pink. The *Stanwell Perpetual* is a true Scotch rose, very light blush fading to white, sweetly scented, and the only one worth notice belonging to its group which is really what the French call a *rose remontante*, or ever-flowering rose. It begins as early as any of its brethren; and the frosts are sure to destroy advancing buds, which would open in their turn, "weather permitting." It would be worth trying the Stanwell in plunged pots, to be transferred to the greenhouse at the approach of winter.

The wild *Sweet Briar—R. rubiginosa*—has been introduced to our pleasure-grounds for the exquisite fragance of its *leaves;* the flowers are scarcely more highly scented or prettier than those of the common Dog Rose, *R. canina*, and in all cases where its blossoms have been improved by intentional or accidental hybridizing, or by the sporting either of germinating seedlings or suckers from old-established plants, the improvement has been obtained at a sacrifice of some good quality in the foliage; such as diminished vigour and suppressed perfume. Those who like, may try the *Carmine Sweet Briar*, the *Monstrous*, the *Scarlet* or *La Belle Distinguée*, and the *Splendid;* but for the purpose for which Sweet Briars are grown, there is nothing to equal the Sweet Briar of the hedge.

The above-mentioned (and there are none better) are quite worthless as exhibition, and nearly so as bouquet flowers. Hybrids from the Sweet Briars, whose flowers have any pretensions *as roses*, have their leaves nearly or quite scentless, and would not be suspected to come of odoriferous parentage. The *Double Marginated Hip* (there is a single one) has an abundance of small, tolerably double, creamy-white flowers edged with pink. *Riego*, light carmine, large and double, has all the air of a Hybrid China. Mr. Rivers advises to re-cross this with the Splendid Briar, in the laudable endeavour to produce seed from which large and very fragrant double roses might be obtained, partaking largely of the characters of the true Sweet Briar in other respects. It is only by these repeated attempts and approximations to a given model that floricultural perfection can be attained. On gazing at a lovely flower, or tasting an exquisite fruit, few persons dream of the patient years and skilful combinations it has cost. The wild Sweet Briar is not to be recommended as a stock to bud on.

Hybrid Roses, from and between the Provence, the French, the Damask, the Bourbon, the China, the Noisette, and others, have hitherto furnished the staple materials of our Horticultural Shows and our professed Rosaries. The climate of the Continent is better adapted than our own for the fertilization and ripening of hips; and from thence the majority of new roses come; but still, those processes are not only possible, but many fine varieties have originated here. One curious fact thus demonstrated is, that in crosses between summer and ever-flowering or autumnal roses, the progeny is almost always a summer rose only, losing its power of continuing in bloom during autumn. To obtain a hybrid perpetual rose, you must cross between *two* perpetual parents. Professed and long-experienced raisers of new varieties from seed have discovered other very curious facts and practical rules. Mr. Rivers instructs us that "when it is desirable the qualities of a favourite rose should preponderate, the petals of the flower to be

fertilized must be opened gently with the fingers; a flower that will expand in the morning should be opened the afternoon or evening previous, and the anthers all removed with a pair of pointed scissors; the following morning, when this flower is fully expanded, it must be fertilized with a flower of some variety of which it is desired to have seedlings, partaking largely of its qualities. To exemplify this, we will suppose that a climbing Moss Rose with red or crimson flowers is wished for: the flowers of the Blush Ayrshire, which bears seed abundantly, may be selected, and, before expansion, the anthers removed; the following morning, or as soon after the operation as these flowers open, they should be fertilized with those of the Luxembourg Moss; if the operation succeed, seed will be procured from which the probability is, that a climbing rose will be produced, with the habit and the flower of the Moss Rose, or at least an approximation to them; and as these hybrids often bear seed freely, by repeating the process with them the at present apparently remote chance of getting a climbing Moss Rose may be brought very near. It requires some watchfulness to open the petals of the expanding flower at the proper time: if too soon, the petals will be injured in forcing them open; and in hot weather in July, if delayed only an hour or two, the anthers will be found to have shed their pollen. To ascertain precisely when the pollen is in a fit state for transmission, a few of the anthers should be gently pressed with the finger and thumb; if the yellow dust adheres to them, the operation may be performed; it requires close examination and some practice to know when the flower to be operated upon is in a fit state to receive the pollen; as a general rule, the flowers ought to be in the same state of expansion, or, in other words, about the same age. It is only in cases where it is wished for the qualities of a particular rose to predominate that the removal of the anthers of the rose to be fertilized is necessary. Thus, if a yellow climbing rose is desired by the union of the Yellow Briar with the Ayrshire, *every* anther should be removed from

the latter, so that it is fertilized solely with the pollen of the former. In some cases, where it is desirable to have the qualities of both parents in an equal degree, the removal of the anthers need not take place; thus, I have found by removing them from the Luxembourg Moss, and fertilizing that rose with a dark variety of *Rosa Gallica*, that the features of the Moss Rose are totally lost in its offspring, and they become nearly pure varieties of Rosa Gallica; but if the anthers of the Moss Rose are left untouched, and it is fertilized with Rosa Gallica, interesting hybrids are the result, more or less mossy." By working out the foregoing hints, every intelligent rose amateur may aspire to the honour of raising some long-wished-for flower.

But many handsome hybrid roses have been the result of accident; for instance, Rivers's George the Fourth, an English flower, very dark and velvety, raised from seed more than thirty years ago. The original plant is still living. Not to enter further into pedigrees, first-rate Hybrid Roses are *Brennus* or *Brutus*, very large and double, uniformly tinted with bright crimson; makes an admirable pillar, and is so vigorous as to form *a tree* if budded on a tall stout stock; *Brown's Superb Blush*, very large and double, dark-crimson centre, with the outer petals blush, apt to fail by monstrosity in shape; *Fanny Parissot*, answers to the above description, but is more to be depended on; *Chénédolé* brilliant red, large, double, very vigorous growth; *Blairii, No.* 2, very large, blush, a free grower, with handsome foliage; *Beauty of Billiard*, middle-sized, of compact form, colour like a burning coal, one of the most vivid roses existing, it actually shines as if it were on fire; *Duke of Devonshire*, rosy lilac, striped with white, well-shaped, imbricated; *Hebe's Cup*, or simple *Hebe*, full pink, large, cupped, a captivating flower in point of form and colour, but deficient in perfume,—a highly-scented perpetual Hebe would be a great acquisition; *Lamarque*, velvety crimson-purple, one of the darkest roses, should be shaded in hot sunshine; *New Globe Hip*, white, at first tinged with the

palest yellow, cupped; *L'Ingénue*, creamy white, imbricated, ranunculus-shaped, the *first* flowers apt to come defective or monstrous; *Triomphe d'Angers*, bright carmine, large, cupped, of weak and rampant growth, adapted for a weeping standard; *Pompone bicolor*, small, very double, rich velvety crimson, apt to have an ugly green eye in the centre, vigorous growth; *Tourterelle*, bluish dove-colour, on the outer petals fading to slaty grey; *Mordaunt Delaunay*, pruned long or scarcely at all, produces garlands and bouquets of small blush roses fading to white, of very pleasing effect. The above may be depended on as excellent varieties.

Of *Climbing Roses*, useful for pillars, temples, verandahs, and running over the front of a cottage, there are several groups. The *Boursault Roses*, *R. Alpina*, the *Alpine* or *Thornless* Roses, are very distinct. They are perfectly hardy, of exuberant growth if well fed, and afford a good foundation on which to bud other varieties, either as standards or trained against a wall. The *Crimson Boursault*, or *Amadis*, has an abundance and a long succession of semi-double effective flowers, and makes a gay covering for an arbour or a rustic arch. The *Blush Boursault*, or *Calypso*, or *De l'Isle*, or *Florida*, or the *White Boursault*, is still more rampant. Its *perfect* bloom is extremely beautiful, very double, of delicate texture, deep blush in the centre, shaded to white outside; but the majority of flowers produced are imperfect and misshapen, as if some one had burst by a kick of the foot a cambric handkerchief rolled tight into a ball. These are the two leading types; other Boursaults are *Drummond's Thornless*, *Elegans*, *Gracilis* and *Inermis*, all of them different shades of rosy crimson and cherry-colour. As standards, they make enormous heads, which become pendent and weeping if allowed to run on.

The *Ayrshire Roses*—*R. arvensis*—are nearly as vigorous as the preceding, quite as hardy, and will serve the same purpose. They are mostly shades of blush and white. *Rosa Ruga*, or the *Double Ayrshire*, the *Queen of the Belgians*, the *Dundee Rambler*, and *Splendens*, are the best of these, and very elegant they are in their peculiar style.

The *Evergreen Roses—R. sempervirens*—are named according to what we wish them to be, rather than to what they are. They have smooth, shining, handsome foliage, which looks as if it *ought* to be as evergreen as a laurel-leaf; and the habit of their growth gives you the idea that they certainly *might* flower all the autumn through. But they don't. The best of them is *Félicité Perpétuelle*, an elegant climber, with clusters of small, very double, pinky white blossoms. *Donna Maria* is very pure white, as if the petals were made of rice-paper, with graceful foliage, but more tender than the above. Grown as weeping standards, they should be suffered to make a cataract of drooping branches, without restraint. *Adélaïde d'Orléans* is not very, if at all, distinct from Félicité. *Brunonii* has the merit of being rosy-crimson. Beware how you prune any of the above. They may be made to climb up trees, like honeysuckle.

Of the *Prairie*, or *Bramble-leaved Rose,—R. rubifolia*, —from North America, the best perhaps is the *Queen of the Prairies;* but florists apologize for them, by stating that "the group is in its infancy."

The *Banksian Roses,—R. Banksiæ*,—from China, white and yellow varieties, are half-hardy climbers which must have plenty of space to ramble over, and a sheltered situation. If kept in bounds with the knife, they will only make the more wood, and *won't* flower. Dead wood and irregular shoots must be rectified with finger and thumb. In all the Banksias, the blossoms are very small, in clusters, and very fragrant. Were they hardy, they might be budded on the tallest procurable stocks, to make trees of the magnitude of Weeping Ashes. For instance, at Toulon, there is a White Banksiæ which, in 1842, covered a wall 75 feet broad and 18 feet high; when in full flower, from April to May, there were not less than from 50,000 to 60,000 flowers on it. At Caserta, near Naples, there is another plant of the same variety, which has climbed to the top of a poplar-tree sixty feet high. And at Goodrent, near Reading, there is a Yellow Banksiæ which, in 1847, produced above two thousand trusses of

flowers, with from six to nine expanded Roses on each truss.

The *Many-flowered Roses,—R. multiflora,*—from Japan and China, are very pleasing climbers, with numerous clusters of small flowers, of shades often changing and fading in the same cluster, from full pink to white. Unfortunately their hardihood is not to be depended on, and they can only be trusted as conservatory plants here, or to be budded and grown as standards in large pots. Beatuiful varieties are *Grevillei* or *the Seven Sisters, Laure Devoust, Rubra, Elegans,* and *Alba,* which will make a grateful return for whatever protection it may be thought fit to bestow upon them.

Of *Fortune's Yellow,* the high-spirited traveller himself complains:—"In the first volume of the *Journal of the Horticultural Society,* I noticed the discovery and introduction of a very beautiful yellow or salmon-coloured rose. I had been much struck with the effects produced by it in the gardens of Northern China, where it was greatly prized, and I had no doubt that it would succeed equally well in this country. But from some cause—probably ignorance as to its habits, or the treatment required—my favourite Wang-Jan-Ve, as the Chinese call it, was cried down. It had been planted in situations where it was either starved or burnt up; and in return for such unkind treatment, the pretty exotic obstinately refused to produce any but poor miserable flowers. Then the learned in such matters pronounced it quite unworthy of a place in our gardens amongst English roses; and I believe, in many instances, it was either allowed to die, or was dug up and thrown away. Five or six years had elapsed since the introduction of this fine climber, and it had never been seen in its proper garb. But the results in two places proved it to be a rose nearly as rampant as the old Ayrshire, quite hardy, and covered from the middle of May with hundreds of large loose flowers, of every shade between a rich reddish-buff and a full copper-pink. The old standard plants in the open ground were one mass of

bloom, the heads of each being more than four feet through. The successful cultivators would inform you that no great amount of skill was necessary in order to bring the rose into this state. It is perfectly hardy, scrambling over old walls; but it requires a rich soil, and plenty of room to grow. The Chinese say that night-soil is one of the best manures to give it. Only fancy a wall completely covered with many hundred flowers, of various hues,—yellowish, salmon, and bronze-like, and then say what rose we have in the gardens of this country so striking; and how great would have been the pity if an introduction of this kind had been lost, through the blighting influence of such ignorance and prejudice as have been shown by the person to whose care it was first intrusted." It would thus appear that even roses, at the commencement of a promising career, are subject to the ill-will of envious enemies, who try to put them down, and to keep them in the back-ground.

Useful, hardy, and vigorous *Hybrid Climbing Roses*, of unknown or uncertain origin, are *Madame d'Arblay*, or *Wells's White*, raised by Mr. Wells, of Redleaf, Tonbridge Wells, a blush rose, which attains a gigantic growth in strong soils; *the Garland*, changing from pink to white after expansion, also raised by Mr. Wells; and *Sir John Sebright*, raised by Mr. Rivers from Italian seed, which produces an abundance of very fragrant flowers in large clusters, of a light vivid crimson, nearly double. The brilliant hue of the blooms of the last is rare and valuable amongst Climbing Roses, as their prevailing hues are white and pale pink. To the above may be added *Astrolabe*, with very double, compact, bright-rose flowers, and Watts's Climbing Provence, really a good flower, double, opening well, full pink with the slightest tinge of purple, and richly and somewhat peculiarly scented.

There are several very distinct species of exquisite Roses, from insular and continental Asia, which merit all attention as conservatory climbers, on trellises in

large pots, or against a south wall, according to their degree of robustness; but they are none of them suited for wintering in the open garden.

The White *Chinese Anemone-flowered Rose* (all that is simple and pure in bloom, and neat in foliage), is not sufficiently known to be appreciated. *R. microphylla*, or *the small-leaved Rose*, "a decided curiosity," according to Mr. Paul, bears most voluptuous rosy flowers amidst delicate foliage; yet it is, like the cuckoo-bird, seldom seen, though often heard of. "The leaves are composed of numerous small leaflets, sometimes as many as fifteen ranging on the sides of the petiole; the branches are of a whitish brown, the outer bark often peeling off in autumn. They are almost destitute of prickles; but the broad sepals of the calyx are densely covered with them, owing to which the flower-buds are as rough as a hedgehog. The Microphylla appears to delight in a warm sandy soil; it is [more than] rather tender, and requires a wall to insure the production of its flowers in full beauty. It requires very little pruning. No varieties have yet been raised to surpass the original."

The original single *Rosa bracteata* was brought from China by Lord Macartney, on his return from his embassy, and was, in consequence, named *the Macartney Rose*; this, though single, is showy, and very desirable for its apricot-like perfume, its ivory petals, its late period of flowering, and its singular, shining, evergreen foliage. It is somewhat hardier than the preceding Asiatic Roses, but still should be indulged with a trellis against a south wall. *Maria Leonida* corresponds to the above with considerable exactness, except that its creamy-white flowers are double. In fact, it is *the* Double Macartney: others have been raised, but they are not to be warmly recommended. Apropos of the Macartney, Mr. Rivers says, "I think it not too much to anticipate that, ultimately, we shall not be satisfied unless *all* our roses, even the Moss Roses, have evergreen foliage, brilliant and fragrant flowers, and the

habit of blooming from June to November. This seems to be an extravagant anticipation; but perseverance in gardening will yet achieve wonders." The first Double Macartney raised from seed is totally worthless, its flowers constantly dropping off without opening; while Maria Leonida is now an established favourite. *R. berberifolia Hardii* is a most interesting rose, raised from seed by M. Hardy, of the Luxembourg Gardens, from *R. involucrata*, a variety of *R. bracteata*, fertilized with that unique rose, *R. berberifolia*, or the Single Yellow Persian Rose. This curious hybrid, like its Persian parent, has single bright-yellow flowers with a dark eye, a deep-chocolate spot at the bottom of each petal, much like *Cistus formosus*, and evergreen foliage. It is not quite hardy. It will probably be the parent of an entirely new group; and what can be imagined more interesting in roses than varieties with double yellow flowers and evergreen leaves?

Autumnal and *Winter* Roses may be divided into two grand battalions,—the perfectly hardy and hard-wooded kinds, of stiff and moderate growth; and the free-growing, softer-wooded sorts, tenderer in various degrees, according to constitution, comprising the *Noisettes*, the *Bourbons*, the *Chinese*, the *Tea-scented*, and the *Fairy* or *Lawrenccan Roses*.

Of the former, the Scotch Stanwell Perpetual has been mentioned. A first-rate flower is *The Crimson Perpetual*, or *Rose du Roi*, or *Lee's Crimson Perpetual*, perfect in form, full pink, finely scented. It requires cutting back freely every year, and highly-manured soil, as do all the autumnals. The reputed parent of this great beauty is the *Portland*, or *Pæstan*, or *Four Seasons Rose*, a bright semi-double fragrant flower, which deserves cultivation, as it will put forth welcome blooms in November. *Hybrid Perpetuals* are more in number than excellence; to open well, they must not be too double, and the petals must have a peculiar texture; otherwise they are glued together by the dews and rain; and the blooms, instead of expanding, fall off in the shape of a mouldy ball. This is

the great fault of *The Queen* (a fine flower) in the climate of England. *Madame Laffay* and *Prince Albert*, both crimson, are good. *Julie de Krudner* and *La Favorite* are delicate pink, fragrant, and pretty. *Celina Dubos*, nearly white, deserves favour, as a sporting branch from the Crimson Perpetual. The *Géant des Batailles*, deep bright crimson; *Comte Bobrinsky*, vivid scarlet; *Gloire de Rosomanes*, velvety crimson-scarlet; *Comte de Montalivet*, violet and red; *Sir John Franklin*, *Gloire de la France*, *Baronne Hallez*, *Alexandrine Bachmeteff*, *Paul Duprez*, *Triomphe de Paris*, and *General Castellane*, all rich crimson; *Jules Margottin* and *Lady Alice Peel*, cherry-colour, are all admirable.

The *Bourbon Roses*, derived from the original bright pink, semi-double *Ile de Bourbon*, are very persevering bloomers, with handsome foliage, of free growth mostly. The following will give satisfaction:—*Madame Desprez*, double, pink, globular, in clusters, with *very* vigorous growth, and *of great hardihood*,—a most useful rose, either for a standard, a wall, or a pillar; *Souvenir de Malmaison*, a magnificent flesh-coloured vigorous rose; *The Queen of the Bourbons*, delicate pinky buff, double, and very fragrant; *Paul Joseph*, *rich dark crimson*, a remarkable flower, of moderate growth, thriving best as a dwarf; *Acidalie*, white; *Menoux*, carmine; *Dupetit Thours* and *La Quintinie*, dark crimson.

The *Noisette Roses*, whose original, the *Blush*, was raised from American seed, are named after the French nurseryman to whom they owe their introduction. The Blush met at first with undue favour; in this country it opens badly in damp weather, and is injured by severe winters, as are most of its progeny. They are free growers, bloom abundantly and late, but are mostly deficient in odour. Good varieties are:—*Aimée Vibert*, pure white, with glossy light-green foliage; *Fellenberg*, semi-double, bright cherry; *Jaune Desprez*, fawn-coloured or salmon-pink, very rampant in growth, should have its spring shoots stopped when about two feet long, *very* fragrant, rather tender, safest against a wall; *La Biche*,

large and white; *Lamarque*, pale straw-colour; *Cloth of Gold*, or *Chromatella*, creamy white with yellow centre; *Sir Walter Scott*, rosy lilac; *Solfaterre*, creamy white, with a bright sulphur centre; besides others, as *Octavie*, *Ophirie*, *Cerise*, and *Vicomtesse d'Avesne*. Many of the latest-flowering Noisettes are loose in their blooms, which is *a merit in them*, as they open with less difficulty. Inexperienced gardeners are apt to prune their Noisettes, and other vigorous-growing roses, too freely; if cut back too severely, they will produce foliage instead of flowers. year after year. Instances of the effects of such ill-treatment may be seen in the suburban villas that surround large cities, where people get ignorant jobbing gardeners to prune their roses by the year, the result being a collection of *verdant* standards with flowers to be hoped for when the good time comes.

Those invaluable roses the *Common Pink China*, or *Monthly Rose*, *R. Indica*, and the *Crimson China*, *R. semperflorens*, whose flowers grace the cottage-garden nearly all the year round, have given birth to numerous beautiful offspring, which are more adapted for pot-plants, or for bedding, than as standards. Many of them, though hardy at root, are cut down to the ground by severe frost, or if not so cut down, require close pruning. Against a wall they will often cover a considerable area. *Alba*, white, double; *Cramoisie Eblouissante*, vivid crimson; *Fabrier*, crimson scarlet; *Belle Emelie*, blush; *Madame Bréon*, rich rose; *Mrs. Bosanquet*, blush; *Eugène Beauharnais*, rosy purple; *Clara Sylvain* and *Madame Bureau*, white; *Carmin Superbe*, or *d' Yebles*, raised by M. Desprez, deep carmine; and *Prince Charles*, brilliant crimson, will constitute a good and select collection.

The *Blush* was the first *Tea-scented China Rose—R. Indica odorata*—introduced to this country, followed by the *Yellow China*. They are good; and we now have others of great excellence. All are more fitted for pots and greenhouses than for out-door culture; they are grateful for light rich soil, good drainage, warmth accompanied by moisture, an atmosphere not liable to extremes

of temperature, and bold yet judicious pruning. When they can be grown outdoors in a south border, there is a perceptible heightening of their tints and perfume. Choice varieties are *Devoniensis*, creamy white, raised by Mr. Foster, of Plymouth; *Safrano*, pale yellowish buff; *Souvenir d'un Ami*, rosy salmon; *Adam*, ditto, very superb; *Goubault*, bright pink, very sweet; *Bougère*, deep salmon, a good pot-rose, forces well; *Vicomtesse de Cazes*, bright orange-yellow, *very* beautiful; *Moiret*, yellowish fawn; *Elise Sauvage*, pale yellow; *Josephine Malton*, rich cream-colour; and *La Renommée*, white, with a pale-lemon centre. These are the roses to cultivate in frames and greenhouses, for late-autumn, winter, and early spring. Some (as *Barbot*, cream, suffused with rose and salmon; *Princesse Marie*, rosy pink; *Reine des Belges*, *Princesse Hélène*, and others) force well, although uncertain (that is, certain to fail) out of doors. They give a little trouble to grow them well; but then, how lovely and exquisite they are!

The *Fairy* or *Miniature Roses* are the Pompons of the China group. They *may* be made to serve as an edging, in favourable spots; in that case, cut them back to within two inches of the ground every *spring*. In pots they must be cut back freely; quite to the ground every other year, and shifted. The young wood will make handsome little bushes, and bear abundant bloom in long succession. The *Blush*, or Fairy, is the most generally cultivated; *Alba*, *Blanc*, or the *White Fairy*, is still smaller, but delicate; *La Désirée* is crimson; *Pompon Bijou*, pale pink; *Gloire des Laurenceanas* is dark crimson, and contrasts well with the above.

All roses, to do themselves justice, must have a *rich* soil; many are even gross feeders. The hardier and robuster kinds do well in deep alluvial loams, and will not object to heavy clayey land if well manured, and not too wet and cold. The Chinas, and many of the Hybrids, when on their own roots, must have a lighter, warmer, better-drained soil, with a considerable proportion of sand and rotten animal and vegetable remains. In theory, *all*

roses may be propagated by cuttings; in practice, non-professional gardeners find certain kinds, such as the Mosses, the Provence, and the Cabbage Yellow, of a difficulty which approaches the impossible. Many Hybrids, the Bourbons, the Chinas, the Noisettes, and others, strike readily, especially if assisted by a hand-light and bottom-heat. Species, like the Cabbage Yellow, which will neither bud nor strike well, must be increased by layers, the shoot being "tongued." The grafting of roses is mostly practised by market-gardeners, for forcing for sale. Immediately the stocks are taken from the hedges in January or February, they may be grafted and potted in the forcing-house, or in a gentle hotbed in a common frame. But by far the most prevalent mode of propagation is by budding on the *Rosa Canina*, or common Dog Rose, which is much the best for general purposes. Others, as the *Rosa Manettii* (a rampant variety raised in Italy), the *Boursaults*, the *R. alba*, and the *Common China*, have been recommended for special purposes by high authority; in which advice the writer takes the liberty of cautioning the reader not to place too much confidence. The robust "Red, Red Rose" of Scotland, which grows so vigorously in the valleys of the Grampians, merits a fair and extensive trial as a stock whereon to bud vigorous varieties. Wild rose stocks are now an article of commerce. By giving an order to proper persons, you may obtain a supply to any reasonable amount. The nearer home they are found, and the sooner they are replanted in your nursery the better. November is the month of months for the purpose. Let them be clean-stemmed, well-rooted, and taken from an exposed situation. Remove all straggling roots and whatever is likely to sprout into suckers. Plant them at exactly the same depth as you observe them to have grown in their native site. Fasten each individual stock either to a stake of its own, or to a long horizontal twig supported at each end by two upright posts. In spring, watch the swelling buds that show themselves the whole way up the stem. When they are about a quarter of an

inch long, cut off all but two, which will be allowed to grow, to be budded, at the height required, selecting strong healthy buds, as near to and as opposite to each other as possible. Into these the whole vigour of the briar will be directed.

Budding may be performed from June to September. Suppose that in July, after a thunderstorm, you receive a twig of a matchless rose. Take it in your left hand; look out for a plump, healthy, dormant bud; cut off the leaf, leaving half an inch of the footstalk; insert your knife a quarter or a third of an inch above the bud; cut downwards, and bring it out a quarter of an inch below; remove with your thumb-nail the woody portion, leaving a small shield of bark with a bud in the centre. This is the bud you want to make grow on your briar. To keep it moist, while you are preparing its new resting-place, you may drop it, if you like, into a glass of water; a snugger and more convenient receptacle is at hand—your mouth. Mr. Rivers says:—"The operation of budding is difficult to describe. A longitudinal cut, not so deep as to cut into the wood, but merely through the bark, should be made in the clear part of the shoot; thus, , making the diagonal cut at the top of the incision. I differ from most of those who have given directions for budding, as they make the incision thus, T; my practice has arisen from the frequent inconvenience sustained by shoots, from standard stocks being broken off by the wind when the cut is made at right angles: with the diagonal incision an accident rarely happens." Any suggestion from Mr. Rivers demands respectful attention; it is therefore mentioned here, before proceeding with *our own* instructions.

On the branch to be budded, make two slits in the bark like the two straight lines which form the letter T. The perpendicular stroke will run along the branch, and terminate where it springs from the main stem; it must be a little longer than the bud you intend to insert. The horizontal stroke will be formed by a cut across the branch, and must be a little wider than the bud you want

to put in. You must just cut through the bark, without dividing the wood beneath. Cut those slits with a pen-knife on a piece of paper, or on any fresh twig whose bark peels readily, and you will instantly see what their object is. With the handle of your budding-knife, gently push or lift the bark on each side of the perpendicular slit, or stem of the T, so as to cause it to rise. Or, you may do it with your thumb-nails. As fingers were made before knives and forks, so thumb-nails were invented before ivory-handled budding-knives. Do nothing that can injure or irritate the interior of the wound. If you poke inside it for half an hour, and plough up the skin, you will injure its delicate organization, and in nine cases out of ten you may whistle for your bud. Instead of that, the bark once raised, take the bud out of your mouth, and slip it in gently till it reaches its place. Be as quick as if you wished to spare your patient's sufferings. It is really a surgical operation. The bud once settled between the divided bark, bind up the wound with a ligature of softest lamb's wool. Mr. Rivers advises cotton twist, such as the tallow-chandlers use for the wicks of candles; the finest quality is best. This is certainly far preferable to the bast matting commonly used; but, with deference to that gentleman, not to lamb's wool, which is more elastic than cotton twist. If you have not been clumsy, the bud will grow; and then you must unbind it, and let nothing else grow on the briar either at top or bottom. At the end of two or three summers you will have a handsome-headed rose-tree, from which you may gather basketfuls of bouquets, if you prune it properly,—which sometimes consists in abstaining from pruning it. For more about the Rose, see "Paul's Rose Garden," and Rivers's "Rose Amateur's Guide." Distilled rose-water is an excellent wash when the eyes, not the eyelids, are inflamed by cold winds and dust.

Syringa—Mock orange, *Philadelphus coronarius*.—A bush, with deciduous leaves white strong-scented flowers, mostly propagated by suckers.

Tecoma radicans—Trumpet-flower, a vigorous creeper, with bunches of long cinnabar-red flowers. Must have a south aspect, is best propagated by cuttings from the root.

Virgin's Bower—Clematis montana, Viticella, and its varieties, are hardy climbers, pretty when trained over lattice-work, and grow easily from cuttings.

Wallflower—Cheiranthus Cheiri.—The single varieties, which are the most odoriferous, are raised from seed. There are yellow, brown, and purple Double Wallflowers, propagated by cuttings; severe frost kills them. To make sure, choice large-flowered single kinds may also be increased by cuttings. Keep a reserve of cuttings in pots every winter.

Weigela Rosea—A charming, perfectly hardy, wide-spreading shrub, from China, covered in spring with gay pink flowers. A great acquisition. Mostly propagated by layers.

Winter Flower.—Chimonanthus fragrans, from Japan, whose sweet-scented flowers appear before the leaves.

Wistaria—Purple Laburnum.—Half-hardy trailing shrubs, requiring the support of a wall, producing in spring drooping racemes of light-purple or lilac sweet-scented flowers. In light rich soil, sometimes flowers twice a year.

Yucca—Adam's Needle.—In appearance, something between dwarf Palm-trees and Aloes, with evergreen leaves, and white flowers borne in enormous numbers on tall flower-stems. *Y. gloriosa, filamentosa*, and *draconis*, are hardy in England. Propagate by seed and by rooted sucker-sprouts.

ANNUAL FLOWERS.

These, with biennials, and bedding-plants, constitute a legion of auxiliaries, which help to keep the garden gay. There is no room here except to mention the names of *Amaranth, Aster, Balsam, Convolvolus, Coreopsis, Clarkia, Cuphœa, Gillia, Hawkweed, Heliotrope, Hibiscus Trio-*

num, Hound's-tongue, Honesty, Jacobæa, Lupine, Love-in-a-Mist, Larkspur, Love-lies-bleeding, Marigold, Marvel of Peru, Mallow, Mignonnette, Nemophila, Nolana, Pea, Petunia, Poppy, Ricinus, Schizanthus, Salpiglossis, Stocks, Stramonium, Sunflower, Spurge, Tobacco, Vetch, Venus's Looking-glass, Verbena, Virginian Stock, Zinnia. The nurserymen annually put forth most admirable and tempting lists, from which to select. There is also amusement to be derived from *not* selecting, but to take your chance of what you get. Thus, Thomas Veitch and Co., Western Counties Seed Depôt, 195, High Street, Exeter, offer Collections of Pretty Flower-Seeds, in twelve varieties, at one, two, and three shillings the collection, according to quality and quantity. Some of the Catalogues are really worth reading, for *instruction's* sake.

FLOWERING TREES.

Acacia, Almond (Double and Single), Arbutus, Catalpa, Cherry (Double), Crabs, Elder, Horse-Chesnut, Judas Tree, Magnolia, Mountain Ash, Paulownia, Peach (Double and Weeping), Robinia, Snowdrop-tree, Sophor The Thorns, Tulip-tree, and others.

THE CALENDAR:

MONTHLY HINTS IN FLORICULTURE.

OCTOBER.

If you enter upon a new tenancy, and are become the possessor of an old-established garden, in the first place look carefully round, to see what you have *visible* in it; and, secondly, delay any great changes or clearances till at least six or eight months have elapsed, and spring and summer shall have made you acquainted with whatever treasures may now lie concealed underground. Often, by forbearance in such cases, you become the master of specimens that would cost you years and years to rear; and sometimes, by merely turning the earth of an ancient border, you bring to light and vitality the seeds of rare plants that have lain buried for years. Read carefully the Calendar to our "Kitchen Garden." Plant hyacinths and other bulbs, if you did not do so last month. Look to your chrysanthemums in pots; see that they are regularly watered and neatly sticked, ready to be brought indoors at the first threat of a frosty night. Cut half-opened chrysanthemum-blooms, *a few* from each variety you have; reserve them in water, under shelter and warmth, and you may often produce a handsome bouquet when outdoor flowers are completely destroyed. Lay out all your planting arrangements for next month; prepare the holes, where the ground is vacant, and have ready the requisite soils and manures. Cut down dahlia-stems as soon as the frost has blackened them; leave the tubers a little longer in the ground, to ripen. Clear away the leaves and stems of tender annuals as soon as they have shared the fate of the dahlias; chrysan-

themums, evergreens, and berry-bearing shrubs, will then show themselves to advantage. Save any well-ripened seed you may find; it will increase your stock of gardening capital. Sow annuals, such as Nemophilas, to stand the winter, and flower in spring. Pot off separately cuttings that have been struck during summer, whether they are to be wintered in a cold frame, or whether they are to be forced for spring flowers, such as China and tea-scented roses, double wall-flowers, calceolarias, winter jessamine, and Deutzias. Provide instantly comfortable lodgings for such greenhouse plants, out in beds, as you do not mean to abandon to the mercies of Old Father Nipnose; and remove them forthwith to their winter quarters. Look to your spouts and gutters overhead, and see that your drains do their underground work. Do not forget that heliotropes, verbenas, and their like, are liable to the disease of "damping off." Take up gladiolus, tigridia, and other tender bulbs.

NOVEMBER.

EMPLOY the long evenings in studying books, pamphlets, and periodicals connected with your profession. There is no royal road to floriculture; a poet may be *born*, but a gardener is *made* such. Keep an eye on your natives from the Island of Tender. Remove the earth from the ground which any projected American bed is to occupy, with the intention of filling the hollow with heath-mould when frosty weather comes to help your carting. Plant everything hardy; roses, flowering shrubs, flowering trees, evergreens, edgings, herbaceous perennials, and whatever will stand the winter. Take up dahlia-roots, and house them in a cellar secure from frost. Think of whatever dielytras, bulbs, polygalas, azaleas, moss roses, and the rest of it, which you may want to force, so as to have in flower in the course of March. Let all pots and pans, which have been used during summer and are now enjoying their holidays, be well washed and scrubbed with a brush, and then set to dry

in an oven hot enough to bake all the germs of weeds, insects, and moss; let them then take their rest in a *recumbent* position, one within the other, not standing upright. Plant tulip-beds. Mulch liberally the roots of whatever you merely suspect will be the better for it, whether passion-flowers, Tecomias, Brugmansias, Macartney microphylla and multiflora roses, or clianthus and hibiscus; if you can thereby save and secure only one fine specimen out of half a dozen, you will be amply rewarded. Sweep up leaves from your walks and grass-plots, as if you were afraid you should never, never have leaf-mould enough. Dragging a garden-roll is capital gymnastic exercise; and your grass-plots and gravel-walks will be very much the better for it. Carefully cultivate the *foliage* of Cape bulbs and others that have flowered in autumn. See that such plants as take their rest now, be allowed to enjoy it undisturbed, without having their slumbers broken by unnecessary warmth and moisture; on the other hand, administer moderate refreshment and heat to such, as the cyclamens, which are beginning to wake up. Lay down turf for lawns and grass edgings. Put a covering of dead leaves, fern, furze, or light litter, over whatever wants it out of doors. Mind your Alpines. Give all the air you can at every favourable quarter of an hour. Keep grass short; you will sweep up your rubbish all the more easily. Stake and tie new-planted strangers: they are none the better for being rocked about by the wind. Trench and manure ground for next year's gross feeders, such as hollyhocks, dahlias, and perpetual roses.

DECEMBER.

Procure and plant rose-stocks for budding. See that they have well-ripened wood, of whatever species they may be. If of the common dog-rose, prefer such as have grown in exposed situations, to the smooth green stems drawn up under trees. A garden may be enjoyed in winter as well as in summer—think of that.

Tidiness is the first point of comfort in a pleasure-ground; after rightsiding everything, try what show you can make with evergreens and Christmas favourites. What is the condition of your hepaticas, winter aconites, snowdrops, crocuses, Christmas roses, and Mediterranean heaths? Have you the Winter Jessamine, the Chimonanthus fragrans, and the Vernal Squill? Will you want any cinerarias, Chinese primroses, forced bulbs, or camellias, for the drawing-room? You may prune now *hardy* roses,—the moss, Provence, Gallica, damask, Scotch, crimson perpetuals, and other equally robust kinds; leave the rest, to see how they look at the end of February. *Moss* is a good covering for the roots of tender things. Are your alterations nearly finished? Dress well, and dig deep, beds that have been hard cropped with flowers during the current year; the parterre must have manure and rotation of crops, as well as the wheat-field. Cover your frames with mats and boards, if the frost comes sharp. Divide and transplant stools of herbaceous perennials, such as rockets and salvias, which have already flowered finely, and have been admired, and which will not bloom finely nor be admired twice in the same place; if you don't, where you once had a beauty, you will next time have a symbol of shabbiness and neglect. *Roots* grow now, though leaves may grow little, or not at all; a plant will bloom all the better if, in spring, it finds itself provided with a nice tuft of fibrous roots, than if, when spring is arrived, those desirable fibres are still to be formed. Sort your seeds; look over your tubers; exchange with your neighbours; study your *Chronicle;* sing the air of "Away with melancholy!" to the words of "Away with damp and mildew!" Restrain rampant stragglers, and throw them into flower by *root*-pruning, leaving the tops much as they are. Manufacture heath-mould for your Americans, if none is to be had within reasonable carting distance. Pay frequent visits to your specimen-plants, whether in the open air or under shelter; large myrtles, in tubs, may be wintered in a coach-house, if

allowed to enjoy all the light and air admissible. Prepare sticks and stakes, and repair trellises, verandahs, lattice-work, rock-work, and arbours, now that the plants which decorate them are dormant.

JANUARY.

The work now mainly depends on the weather; but N.B. you have not so much time before you as you had in December. Look over your cold frames; give all the air you dare, and dust with flowers of sulphur at the first symptom of mildew. Your hyacinths in pots will be starting. Look sharp after wood-lice, slugs, and aphides; an ounce or two of Scotch snuff are well bestowed in doctoring the last. "Slow and sure" is the motto to affix over the portal of the forcing department. How are you off for silver-sand, pasture-loam, rotted cow, sheep, and rabbit manure, peat-earth, defunct and cold cucumber-beds, and good alluvial loam with a touch of clay in it? For horses, shut up in their stables during this dead season, slow carting is a healthy treat. What is the substance which Liebig and other learned men call "humus," and the French gardeners style "terreau?" What are its composition, uses, and application? Do you think you could contrive to compound a little "humus?" If a supply of it had not been made by somebody before your time, horticultural prospects would not look so bright as they do. See to your supply of pots, pegs, and labels. Thin out flowering shrubs, where too crowded. Keep everything indoors fresh, neat, dry, and well ventilated; under cover, at least, you may do nearly as you please. Call over your muster-roll for next summer's campaign; nurse the invalids in hospital, take care of the healthy, train the undisciplined, keep down the upstarts, restrain the wanderers without being afraid of pinching them hard, bury the dead decently, and raise up a new generation with all your might and main. Don't work the ground when it is sodden, muddy, or rendered sticky by a recent frost;

don't dig in snow or ice, for they will chill your borders for weeks to come. Level turf, where its unevenness threatens to interfere with mowing. Protect tulip-beds where the leaves are beginning to peep aboveground; also autumn-planted ranunculuses; hyacinths likewise. Cover them with hoops and mats, or canvass, when frost threatens to be at all severe. Don't suffer snow to lie on your walks. Search for the winter sleeping-places of snails. Air, cleanliness, and shelter from excessive wet, are necessary to the health of Carnations and Picotees. Think well what you mean to do next spring, and arrange accordingly; observe in *which* department you are strongest; endeavour to improve *that* to the utmost; make it your war-horse, your charger, your show collection, your speciality.

FEBRUARY.

PRUNE and tie in climbers on walls and trellises, such as honeysuckles, clematises, birthworts, and American allspices. Plant ranunculus-beds. Sow sand on lawns, to make the grass come fine; roll them, to kill moss; mow them, to make them thick and elastic. Look over your Noisette, Bourbon, Hybrid China, and other free-growing autumnal roses; prune them moderately, thinning them out, but leaving the principal shoots *long*. Pray don't cut them back to two or three eyes, unless you prefer leaves to flowers. Now is the last time of asking, for planting ornamental trees and shrubs. Make sure that your supply of bedding-plants is likely to correspond to the demand for them. Remove dahlia-roots from their winter quarters, and put them into heat for propagation. Sow in small pots Maurandyas, Lophospermums, and other climbing annuals, to get strong by May. Do the same with sweet-peas, scarlet-runners, major convolvoluses, nasturtiums, and other less rare but popular flowers. Finish off every atom of undone winter work, and keep that belonging to spring close up to the mark, that you may have your hands at liberty to answer the

requirements of April, May, and June, when you will want every day to be six-and-thirty hours long. Make hotbeds for tender annuals; the list is long. Select a few striking, effective, unusual kinds, and display *them* in a large assemblage, rather than fritter away your strength on a multitude of incongruities. The ice-plant makes a remarkable bed in a south border; zinnias, balsams, and ipomœas, are good in their way. Trim grass edgings with a proper cutter; fill up any vacant gaps in borders of thrift, gentianella, dwarf campanula, double daisies, primroses, sedums, &c. Plant out seedling hollyhocks, in well-manured ground, where they are to bloom; strike cuttings of approved sorts. Never, for a single instant, forget the vast abyss of flowering plants which you will shortly be compelled to fill somehow, well or ill. If any choice novelties have lately come out, and are likely to be the rage, now is the time to make sure of them; by-and-by you may have for answer to your application, that "the execution of further orders must stand over till the following spring." Bedding-plants, propagated by yourself on the spot, in gentle heat, are worth double the number travelling from a distance, and forced at a high-pressure rate.

MARCH.

KEEP an eye on the jobbing gardener who undertakes to "right-side" your suburban parterre in spring; take care that he does not make it neat by making it empty; that the beds, which he leaves so beautifully raked, have nothing but rubbish growing in them. Hard winters do not cause the disappearance of *all* choice flowers. Clip box edges at the beginning of the month, supposing that it is not freezing sharp; turn a deaf ear to those who advise you to do it in June, or, infinitely worse, in September. Do all you can to remedy the ill effects of February's sleet, slop, and rain. You may plunge in borders, or in beds (to be filled hereafter with scarlet geraniums, or verbenas), hyacinths, and tulips, and

narcissuses in pots; they may be removed to perfect their foliage in the reserve ground. Hardy annuals may now be sown in favourable weather. Take stock, as it were, and appreciate accurately all your resources in hand. Auriculas will now be coming forward; give them a more liberal allowance of air and water. Tree Pæonies require temporary shelter in this month and the next, if at any time. Prepare the ground for dahlias, by digging it deep and manuring highly. Your stocks, China-asters, &c. &c., may now be sown under glass on a gentle hotbed. Finish pruning; cut your roses close to an eye by a clean stroke with a sharp knife, so as not to tear the bark. Above all, do not leave a long snag to die down to the bud; the hollow left by its pith will serve as the retreat and resting-place of the detestable grubs which will destroy your buds. If your gardener prunes a standard-rose, or any other ornamental shrub, with a pair of shears, or slashes at them with a carving-knife, like a French Zouave paying his compliments to a party of skirmishing Cossacks,—for the first offence, make your shrub-slayer a present of an excellent buckhorn-handled pruning-knife; for the second, turn him out of doors, "to seek a shelter in an humbler shed." Disbud dog-rose stocks, leaving only those buds to shoot on which you intend to insert your bud. A covering of old fish-net, supported by hoops, over tulip, ranunculus, and hyacinth beds, does no harm. Have a peep at Kew, Chiswick, the Regent's-Park Botanical, and the leading nurserymen about London. Let your gardener go too, if he is wide awake at the times when his eyes are usually open. But it is possible to visit even Kew, and to come away with a vague impression that it is a place where a few greenhouses and hothouses are open to the public, gratis.

APRIL.

MAKE everything smart to welcome summer; gravel-walks rolled; beds neatly raked; spring flowers shown to the best advantage; not the ghost of a dead leaf remaining; prunings and trimmings swept away, to be burnt; edgings trimmed and mended; summer-houses and garden-seats painted, repaired, and cleansed from cobwebs; tumble-down rockwork dovetailed together again, and the wounds healed with houseleek, lovechain, or saxifrage; unsafe bridges rendered passable; leaning Pisa-tower-like posts and palings restored to their proud perpendicular. "April showers bring May flowers;" but if you don't sow and plant the flowers, they *can't;* likewise if you let them be scratched up by hens and pecked to morsels by sparrows. Therefore, any forgetfulness now, and previously, will rebuke you with its woful blank face staring at you by-and-by. Better provide yourself with too much than too little; cuttings (with a little bit of root to them) of cupheas, verbenas, heliotropes, petunias, anagallises, fuschias, pansies, and many more, can always be exchanged, or given away. Tie the full-bloomed stems of hyacinths to sticks as you want them. Sow Phlox Drummondii in a little heat: it makes an exquisite bed. Make as sure as you can that wireworms do not attack your Carnations and Picotees; for this, the compost must have been looked over by handfuls. It may seem a long and expensive task to do so; but it is true economy, if you grow high-priced varieties. If your garden is decorated with vases, see that they are filled with proper soil, and that you have wherewithal to plant in them. A *mixture* of plants with a long succession of bloom—some of pendent and trailing growth, others stiff and sub-shrubby like geraniums—produce the most artistic effect. Let your gardener look at a flower-piece painted by one of the first-rate masters, and he will catch the idea, if he is not a blockhead. He will see it well worked out at Kew. Water transplanted trees and shrubs, if drought threatens. Plant out wallflowers,

double rockets, and the perennial larkspurs, of which Delphinium Hendersoni is one of the finest. Do your best to obviate north-east winds and spring frosts. Attend to your dahlias, and to everything else that is now in the course of propagation. Sow successions of annuals; weed, rake, hoe, and trim.

MAY.

Don't cut off the long shabby leaves of crocuses and other early bulbs. If you wish for flowers next spring, you must leave them to wither on the plants. Remove gradually their great-coats of straw, leaves, or fern, from fuschias, tea-roses, &c. &c., which have been kept snug during the winter. Towards the end of the month you will be thinking about venturing out your bedding-plants; in fixing upon the exact time, the signs of the weather and your situation must guide you. It is better to be a week too late than a day too early. If you are near the coast, learn whether the warm water from the Gulf-stream has yet reached the shores of Britain; if it has (and the owners of bathing-machines will be able to tell you), you may plant in safety, without nightmare dreams of nipping frosts. Sow anemone-beds, as directed in the body of the book. Remove the awning from beds of hyacinths and tulips that have bloomed; the ranunculuses will want it soon. Transplant half-hardy annuals to the open ground, and whelm a flower-pot over them at night as a protection from frost, drought, and slugs, till they have taken hold of the ground and have made their start in life. Look over the patches of "hardies" sown last month, and repair any failures by sowing afresh. Plant out dahlias, *if* all is safe, on very rich and well-prepared soil. Freshen up your gravel-walks in dry weather, by chopping out with a hoe all weeds or grass that have intruded themselves; rake the surface well for several successive days, and then lay on a thin coat of new gravel, which must be made to combine with the old by assiduous rolling. Save anemone-seed

as it ripens; if you don't, it will all blow away. Stick pinks, carnations, picotees, and plants in general whose flower-stems are rising; it is folly to take infinite pains to raise and cultivate a plant, and then to leave its bloom to draggle in the dirt. Weed right and left; break up with the rake and hoe the surface of any bed that has got hard and caked. Watering is often more requisite now than at any other time of the year; very, very weak, clear manure-water will sometimes be a great help; but it must not be indiscriminately administered; for instance, to rhododendrons and azaleas.

JUNE.

This is the time for the main planting-out of dahlias, heliotropes, and other tender South Americans. Look carefully over your roses; their enemies are legion,—of insect vermin the host is fearful; *proper* pruning is *some* preventive. The maggots, and worms, and caterpillars, and grubs, which attack the buds, must be picked out patiently with finger and thumb. Other remedies are best described by the syllables uttered by the domestic duck. Aphides are comparatively harmless, though unsightly; a thunderstorm proves an excellent cure for them. For want of a tempest, take the tip of each twig in one hand, and with a painter's brush in the other, brush off the clustering parasites. They can't stand a repetition of this regimen. An amateur has invented a double aphis-brush, closing with a spring-handle, which, says the advertisement, in a very simple and easy manner, instantly cleanses the rose from that destructive insect the green-fly, without causing the slightest injury to the bud or the foliage. Finally, encourage lady-birds and the sightless grubs of lace-wing flies, which eat or rather suck the aphides. Some of your earliest spring bulbs will soon be fit to be taken up. Save seed from Auriculas and Polyanthuses. You must work hard now to keep things in order; grass has to be mowed, disbudding or summer pruning done by finger and thumb, and the

whole contents of the garden watched, because nearly the whole contents are advancing at once. Water still, if no summer showers have fallen. Thin out annuals where they come up too thick. Attend daily to your plants in vases; neglect now is almost irremediable. Hope to live to see next winter and spring, and provide for them by striking cuttings of roses, wallflowers, choice stocks, and whatever else is likely to be useful. The very trimmings and prunings may be economized in this way. Watch your beds of seedling anemones. Lose no time in striking chrysanthemums for this autumn's bloom. Cuttings of the young shoots of pansies, rooted under a hand-glass, will make nice little plants by the autumn. Sow Brompton Stocks, Sweet Williams, Foxgloves, Canterbury Bells, and other biennials which do not blow their first season. Peg down verbenas as they grow and spread. Lay bean-stalk traps for earwigs. Decide what seeds you will save, marking the stems of the flowers approved by tying a bit of coloured worsted round them.

JULY.

Take up hyacinths and other spring-flowering bulbs and tubers whose leaves are completely withered. After a soaking shower, bud roses; perform the operation as lightly and as quickly as you can. If you could blow the bud in—presto!—like a conjurer, you would succeed in nine hundred and ninety-nine cases out of a thousand. You may shade the bud afterwards by a laurel-leaf, if the sun comes out scorching. Save all sorts of seeds; raise all sorts of cuttings: with many of them, it is "now or never." Still carefully tend your seedling anemones. You may take up old-established roots, as directed, if the leaves are quite withered, to be planted again as soon as you can. Tie the rising dahlias to their stakes; leave only a single stem, if they send up more than one; and cut out the bottom laterals and irregular shoots. The first two or three flowers are seldom good for anything; it is as well to cut them out while still in the bud, that

their successors may have the benefit of the sap. It will improve the summer roses, if, when they have quite done blooming, all the flower-shoots are cut back to the branch from which they started, unless it be desired to ripen hips, for seed. Train and tie in your vigorous creepers, weekly if possible. Mow grass-plots continually. Support your hollyhocks, and see that the stakes are firmly fixed in the ground; otherwise they will be as likely to pull down the flower-stems in a high gust of wind, as to keep them up. Pipe and layer carnations, pinks, and picotees. Take up tulips and ranunculuses. Help your autumnal roses by frequent doses of not too strong liquid manure. The garden is now in great beauty; let it not be disfigured by slovenliness. Remove faded flowers, withered stems, and over-luxuriant weedy growths: their absence will make way for the many lovely blossoms that are yet to come. Attend to your pinks and carnations from which you intend saving seed. Pot off your struck chrysanthemums. Take care that bedding-plants of trailing habit do not encroach too far, overlapping and smothering box edgings, and inflicting on your parterre a wound which is not easy to heal. You will now begin to appreciate the value of Bourbon, Noisette, and Perpetual Roses: treat them according to their deserts. Do not let a weed show a leaf, much less let it ripen seed.

AUGUST.

Hyacinths and other Dutch bulbs will be beginning to arrive at the nurserymen's. Remember, first come, first served. Try for the chance of selecting the finest roots. See that your dahlias and hollyhocks are not snapped by the wind for want of tying up as they advance. Shift chrysanthemums in pots to one size larger; keep them frequently and freely watered. Tie those in the open ground to stakes. Save seeds, plant cuttings, and continue to bud roses on favourable occasions. Now is the time to take up and divide the clusters of bulbs and offsets of Spanish Irises, Crowns Imperial, Fritillaries, and

others, which are none the better for being kept long out of the ground. We are beginning to turn a sort of gardening corner; we may look two ways, behind and before us; but we have not yet time to pause and rest, for a grammatical lesson has to be learned by conjugating the verbs *mow*, *rake*, *sweep*, *water*, *dig*, *roll*, *clean*, and *gather*. Sow the seeds of choice primulas, polyanthuses, and auriculas. Plant out rooted cuttings of pansies in a shady situation. Sow stocks for spring flowering. Visit the nurseries now, and select (before they have lost their foliage; and mark, or number, so that you have not to scramble for them by-and-by, or be obliged to take just what others choose to leave you) ornamental shrubs for planting in November, to try the effect of a spring-flowering bed. Many valuable plants have been introduced, which were unknown to our fathers in their youth. *Forsythia viridissima*, from China, forms a thick bush, with deep-green leaves which are odoriferous when rubbed, and produces an abundance of brilliant-yellow bell-shaped flowers. *Berberis Darwinii* has shining evergreen leaves, and drooping spikes of golden florets. The Siberian Rhododendron (*R. Dauricum atrovirens*) displays its cheerful violet-pink blossoms in March. *Rhododendron ciliatum* is a dwarf Himalayan species, with comparatively large and conspicuous white blossoms. *Rhodora Canadensis* (in heath-mould and shade) will put forth, before its leaves, a profusion of rose-scented, pinky-lilac blooms, which are exceedingly pretty, though not large in size. Remember, too, Dwarf Almonds and double-blossomed Peaches, and what has been already written respecting *Deutzia gracilis* and *scabra*, and *Jasminum nudiflorum*. If we never regretted any money worse than what we spend on flowering shrubs!

SEPTEMBER.

PLANT imported bulbs of Van Thol and Parrot tulips, hyacinths, narcissuses, crocuses, snowdrops, and other hardy early-flowering genera, as soon as you can possibly get them home from the seedsman's shop. Roses may still be budded with success; sometimes the latest budded do the best. Sow annuals to stand the winter. Make the most of your bedding-plants and half-hardy showy rambling things; they may be in their glory, but their sun is fast preparing to set. Take every care of your dahlias and hollyhocks; at the same time look forward to the Chrysanthemums. Remember still that seeds will be wanted next spring. Pot off the first-struck cuttings of the season. Gather half-opened annual Everlastings, for winter bouquets. Take cuttings and make layers of such things as strike in winter. Admire the lovely objects with which you are now surrounded; but bear in mind that a single night may deprive you of them, and that their beauty is but of a day. Be not selfish in your garden pleasures; show, explain, and communicate freely; and manifest by your manner, as well as by your money, your appreciation of those who prepare for you a PLEASURE-GROUND.

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